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Vol. I., Part 1.] [February, 1871.

A NATURAL HISTORY OF CAGE BIRDS.

BY

J. G. KEULEMANS,

LATE ASSISTANT TO THE MUSEUM OF NATURAL HISTORY OF LEYDEN.

WITH

SIX COLOURED PLATES DRAWN AND LITHOGRAPHED BY THE AUTHOR.

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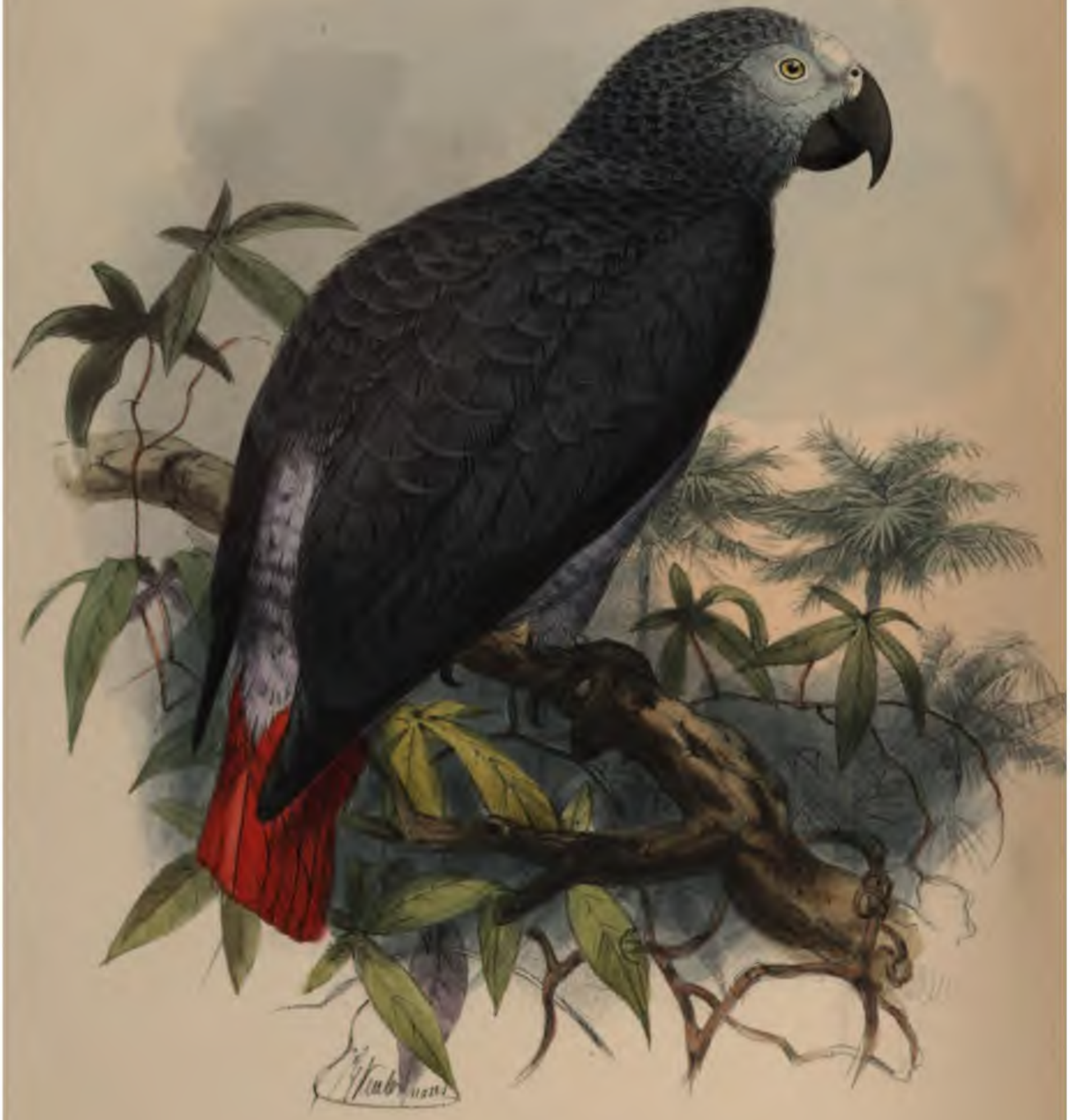

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PSITTACUS ERYTHACUS

THE GREY PARROT

(Psittacus erythacus).

Of all the foreign cage-birds that decorate and enliven our dwellings, few are more common or better known than the Grey Parrot. Large numbers are being continually brought to Europe from their native wilds, and at some places —Lisbon, for instance—they may be seen in large numbers at the bird-shops, but nowhere is the Grey Parrot more frequently found as a cage-bird than in London.

The numerous vessels from the African coast that put into the port of Lisbon keep the dealers of that city well supplied with these birds. Scarcely a ship leaves the localities of the Parrots without the sailors bringing a larger or smaller number away with them, and in this way the Grey Parrot becomes plentifully distributed through France and Germany. Very frequently the sailors of English ships touching at Lisbon, become purchasers of these Parrots; and sell them on reaching Liverpool to the dealers there, from whom the London bird-fanciers obtain their largest supply.

The Grey Parrot is also a common house-bird in Holland and Belgium, while in most countries of Eastern and South-Eastern Europe it is rarely seen, although a well-known bird.

The range of the Grey Parrot is limited to the Western Coast of Africa, and extends for some distance into the interior. It is common on the Gold Coast and adjacent islands; but is curiously distributed among these latter. On Prince's Island we find these birds in great abundance, while on the neighbouring island of St. Thomas not a Grey Parrot is to be seen — a fact to be accounted for by the large numbers of the Kite (*Milvus parasiticus*) inhabiting the latter island.

Although a familiar cage-bird very little is known about its habits when in the wild state. It is therefore with much satisfaction that I find myself able, from personal observation, to communicate many new and interesting particulars concerning it, which I hope may prove acceptable to my readers, and at the same time enable them to form some idea of the *vie privée* of this favourite.

At Prince's Island, which may not inappropriately be termed the Paradise of the Grey Parrots, I resided for more than a year, and during that time I daily carefully observed their habits and mode of life in the natural state. Nowhere on the continent of Africa are these birds so plentiful, nowhere so free and undisturbed. On Prince's Island they are supreme among the birds; they stand in no dread of the other feathered inhabitants, but are feared and respected by them. From their own immediate domain the Parrots drive away all other birds, both great and small,—if necessary combining for that purpose.

The only enemy they meet with are the Kites (*Milvus parasiticus*) of the neighbouring island of St. Thomas; it sometimes happens that a Kite does, either by design or accident, find its way to Prince's Island, but no sooner is the intruder observed than the alarm is raised, the Parrots hasten up from all parts, and in a very short time the luckless bird is either killed or driven away.

During the day, when flying about in flocks, the Parrots never settle on a tree, unless satisfied that it is a safe resting-place. They are very suspicious, and always on the alert, taking notice of everything that occurs in their vicinity. They are more prudent and sharp than the native, quicker than the monkey; they require no tools to crack the hard nuts, and are consequently the most independent of the living creatures on that island.

On Prince's Island there is a very lofty mountain, reaching some 1200 feet above the level of the sea, and called by the natives "Pico de Papagaio," or Peak of the Parrot. On the slope of this mountain, and extending far up its side, is a magnificent forest. The trees are of great size and height, and their trunks and branches give support to the Lianos and other climbing plants, which hang about them in rich luxuriant folds. The density of the forest is so great that it is only with the utmost difficulty and toil the explorer can force a passage through it, while to the Parrots, who come up there every night, it presents no obstacle, but gives them, under the shelter of its thick foliage, a secure and pleasant resting-place.

As sunset draws on, the Parrots may be seen in parties winging their way for the mountain from all sides of the island, and on reaching it take their places on the trees. Approaching troops acquaint their fellows of their coming by a loud whistling. Those of them who have found an approved resting-place warble and whistle as long as daylight continues, but as darkness closes in the noise gradually subsides, and all becomes hushed. Occasionally, however, a few sounds may be heard at intervals after dark, which most probably proceed from some belated bird seeking a place or a quarrel: sometimes in the dead of the night the whole colony is thrown into an uproar, occasioned, I believe, by the visit of Bats or of some predacious animal.

There was one flock in particular, consisting of about forty individuals, that attracted my special attention; every evening at nearly the same time, *viz.* half-past five, they would pass over my house on their way to the mountain. I used to follow them with the eye, and always found that they settled on the same tree.

My house and plantation were situated at an elevation of some 1200 feet above the sea-level and opposite to the Pico de Papagaio, a valley being between. From here I had an extensive view across to the Pico; and observing a trail running in the direction of the tree which this particular flock of Parrots had taken for their resting-place, I determined to pay them a visit. As the distance did not seem to be very great, I thought that by following the path visible from my house I should have little difficulty in reaching the wished-for spot without either guide or assistance.

Accordingly, on the 16th January, 1865, I set out unaccompanied, at daybreak, for the place in question, and soon reached the edge of the forest, but before I had penetrated very far it became evident that my plan was not so easy of execution as I had imagined, for that which from my window looked like a path, turned out to be merely a rough track or trail overrun with rank vegetation, which only served me for a short distance, and then became obliterated; this loss of track brought me to a standstill. I was alone and had no knowledge of the way, but being unwilling to return, having got thus far, I looked about in hopes of discovering in this dense tangle some place through which I might force a passage, but in vain; on all sides the Lianos and other climbing plants grew so thickly, and presented such a high impenetrable barrier, that I felt to attempt to proceed further without a guide would be unsafe, and at once decided to retrace my steps and obtain the assistance of a native. From surrounding appearances I was convinced that many Parrots were breeding there already, and the idea of giving up a trip that promised such interesting results was not to be thought of. I hastened back and soon reached my house again. Having secured the aid of a native, who assured me that he was able to make his way to the place and find his way back, I set out again the same morning with the hope that this time my wish to reach the abode of the Parrots would be realized.

At nine o'clock we started, and after a very fatiguing journey, during which we had in many places literally to cut our way through the dense undergrowth, reached one of the places frequented by the Grey Parrots. My gratification at this moment was extreme. What should be done? Shoot as many of the old birds as presented themselves, or seek out their nests and take the young ones home? We decided to take the young birds. From the noise we knew that many Parrots were in our vicinity: on all sides their joyful whistling resounded, and the falling of pits, or husks, and the stones of fruits, sufficiently proved that many were concealed in the trees about us. Up to this time we had not seen any; they kept themselves so well hidden among the leaves that we could not get sight of them. Thus they remained for some little time, when at last one came down, and I could not restrain the temptation to shoot it. At the discharge of the gun a multitude suddenly burst from their concealment and dispersed with deafening screams. Picking up my prize we walked cautiously forwards until we observed at a distance in front of us another troop—or it might have been the one we had disturbed—on the highest branches of an exceedingly large tree. In half an hour we reached the spot, where we found numbers of large trees with foliage so thick that we could not see any Parrots. While waiting and eagerly watching we again heard the falling of empty husks, and at the same time observed a movement among the leaves of a palm tree. On closer inspection we could see our birds, and as we had no desire to cause another Parrot revolution we left them to eat their palm nuts in peace. It being now about five o'clock in the afternoon, and the sun setting at six, we had only an hour left at our disposal to seek after the nests. My companion being more likely, from his experience, to spy out the nests quicker than myself, I set him to inspect the trees within a short circuit, while I remained at that spot, and arranged that he should inform me of the discovery of a nest by imitating the call of the Wood Kingfisher (*Halcyon dryas*). Soon after the sudden signal of my black man informed me that he had been successful in finding nests: repeating the call alternately, I at last got up to the place where he was, and the position of the nest was pointed out to me. A hole in the trunk of one of the trees was, according to my man, the home of a pair of Parrots. Knowing from experience how sharp-eyed these fellows are, I was quite sure that something Parrot-like would be found inside the hole. Darkness was now coming on fast, and it being too late to do anything that night we marked the tree by fastening some palm-leaves on the trunk, and left the breeding pair inside the hole undisturbed till next morning. While thus occupied, troops of Parrots approached from different sides and settled among the trees. As for ourselves we found a capital shelter under a clump of bushes, where we concealed ourselves, and from there observed unperceived the doings of the Parrots around us. Some were climbing and hanging on the branches, others flying and scampering through the foliage; we saw them perching close to each other, and afterwards five or six settled just above our shelter. Numbers came from all sides, and the chattering which we had previously heard at the distance was by this time close to us. There was a noise of whistling, screaming, quarrelling, and the breaking of dead branches. We saw them pass before us and settle on the trees: at this time we must have been surrounded by hundreds of Parrots. Being now almost dark, and having to pass the night in the open air, it was time to take steps to make our sojourn in the forest as comfortable as possible. A fire being the first necessity, we left our shelter in order to gather some of the dead palm-leaves that lay about; as we emerged from our covert the Parrots perceived us, and in a moment the whole place was ringing with their deafening screams. The fire was soon made, and, burning up quickly, it cast a cheerful light and warmth around the spot, rendering our bivouac more agreeable; and the Parrots, attracted by the unusual sight, kept flying over and around the place thus illuminated. An hour afterwards, quiet being restored, we proceeded to get our supper, consisting of roasted bananas; this being finished, we dried some moss to serve for a bed and retired; but the night was so cold, and the mosquitos kept stinging my face so pertinaciously, that it was impossible to sleep; so I got up and roasted some more bananas, smoked a pipe, and then felt quite ready to go in pursuit of the birds. My companion was sleeping soundly, apparently undisturbed by those causes that deprived me of my sleep. As it wanted some three hours of daylight I occupied myself in preparing limed sticks and making snares. On the appearance of the first streak of dawn we proceeded to the tree where a nest was suspected to be; my black man, being a capital climber, went up to the hole, and looking in found two young Parrots, which he carefully tied up in a pocket handkerchief and lowered down to me: the little things seemed to be about a fortnight old, and readily took some banana I offered them. The old birds were absent, probably seeking food; at least we did not see them. The two young ones we fastened with string to the trunk of the tree, and placed some limed sticks round about them. In this way we caught one of the parent birds, the securing of which was a matter of some difficulty, owing to the resistance it made. We put the freshly caught old bird in a linen bag, and fastened it beside the young ones. In a few minutes our captive began to turn round and round, at the same time screaming vociferously: this quickly attracted the attention of the Parrots in the neighbourhood, which came near, gazing with astonishment at the bag which contained their mysteriously hidden comrade. One more bold than the rest flew down and settled on a limed stick, but its struggles were so violent that it succeeded in getting away. I then took my gun and shot two individuals, the others immediately taking flight.

On the same morning we discovered two more nests: one of them contained three very young birds; the other had only one egg. My man had previously laid some snares, but no birds had been caught. We then searched about among the trees in this part of the Pico de Papagaio, and discovered several holes, many of which probably contained nests, but we were not able to climb up to see, the trunks being so smooth and thick.

We set out on our return for my plantation at noon, and arrived there safely at 4 P. M. Although my excursion had furnished me with the small result of six living Parrots, three dead ones, and one egg, yet the exertion this had entailed brought on a severe fever, which developed itself as soon as I got home and confined me to my house for several days.

While on the Pico I availed myself of such a favourable opportunity, and took particular notice of the habits of this bird. The first thing I observed was that it is always found in flocks, which flocks go about over the island during the day, returning to their own appointed place on the mountain in the evening to roost. Their food consists of fruits, such as the palm nut, the avocat (*Laurus persea*), the banana (*Musa paradisea*), goyave, mango, and many other fruits of a smaller kind, but they always give the preference to palm nuts.

They drink but little, and as no water is found on the Pico they must obtain what they require during the day on the lowland. They make no nest, but deposit their eggs (which are from two to four in number) on the bottom of the hole. The eggs are in size, shape and colour similar to those of the Wood Pigeon (*Columba palumbus*): when unblown they are of a pinkish hue, which may be owing to the thinness of the shell. Both birds take it by turns to sit, and while one is sitting the other often comes and feeds it out of its crop. The young ones are fed in the same way. In time of danger the old birds defend their progeny vigorously, and should the enemy prove too strong to be successfully resisted by one pair, other Parrots come up to their assistance, and joining forces either kill or put the aggressor to flight.

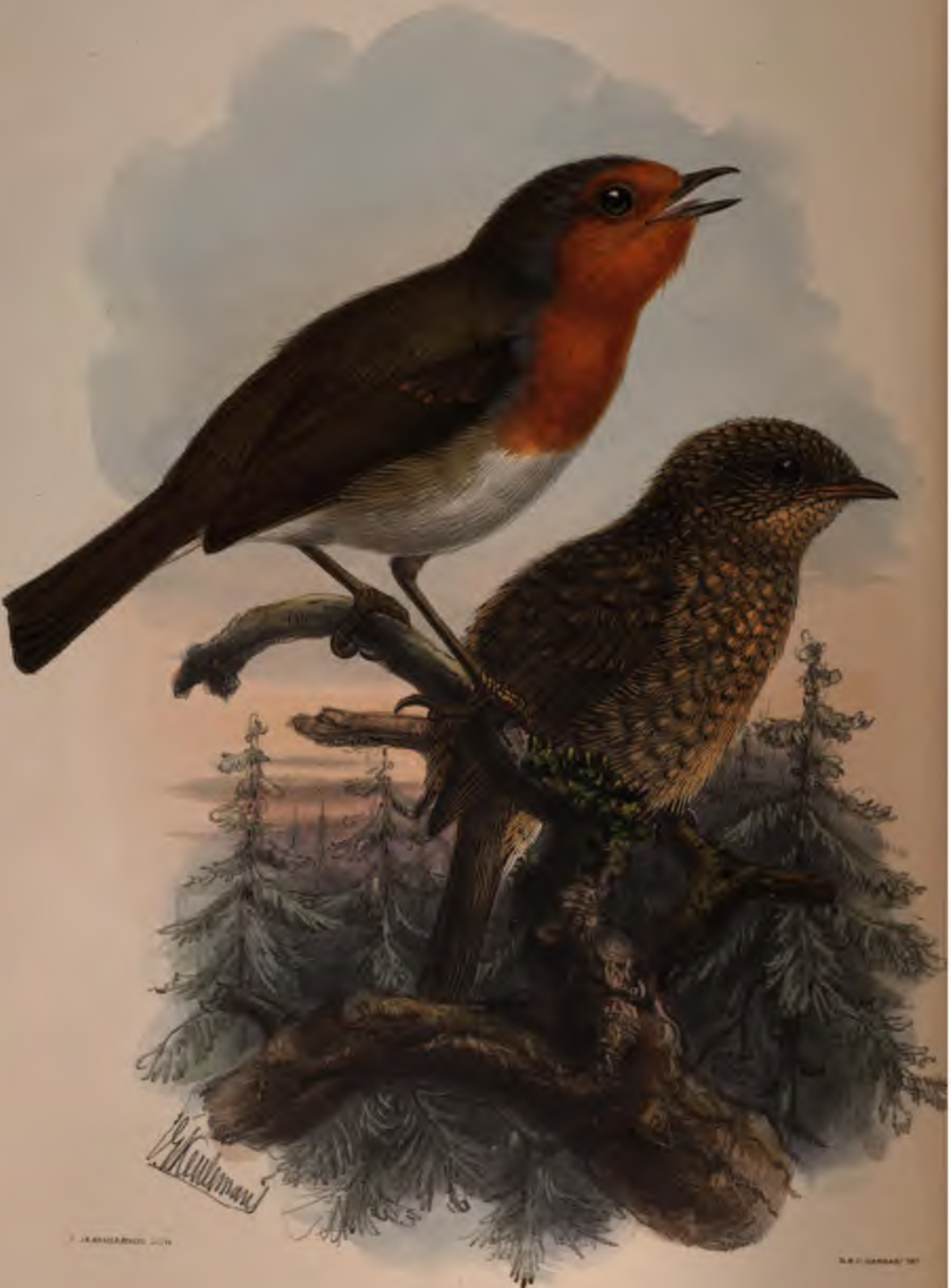
The Grey Parrot delights to dwell in companies: many nests are found within a few feet of each other, and often in one tree two or more holes may be seen occupied by hatching pairs.

The young birds are covered with a long and fluffy down, which afterwards, when moulting, falls off. Their first plumage is darker, and the iris dark grey, instead of pale yellow. They leave the nest when about four weeks old, but may be seen looking outside the hole some time before they are able to fly. They grow quickly, and the feathers get gradually paler; when two months old the first moulting begins, which lasts about five weeks, after which the plumage is similar to that of the old birds, although the edges of the feathers are not so pale and the cheeks and forehead not so white as in old individuals. The iris changes gradually and slowly; the eyes are dark for more than seven months. The feathers when wet appear of a dark blueish grey, with a purple gloss.

The value of a Grey Parrot on Prince's Island is one dollar (*4s. 2d.*) for an old bird, and half that sum for a young one. There are not many sold on the island, owing to the heavy freight charged, being about five shillings for each individual as soon as it is shipped.

As to the method of treatment, I have always found hemp-seed to be a very good kind of food, and one that is relished by the bird; boiled rice is also very suitable, and a lump of sugar is a source of great amusement. They will eat canary and other small-grained seeds, but these I think are objectionable, as they keep the bird too much occupied with eating, so that they lose a good deal of their capacity for imitating words. The best food is Indian corn boiled or ground and mixed with hemp-seed, and bread softened in sugar water. Almonds are not easily digested, and bitter almonds make them ill. Parsley is poison for a Parrot. Fresh fruit, such as figs, pears, cherries, &c., always give great satisfaction to the bird, but they must not have too much of it.

If, while being taught to imitate words or sounds, the bird exhibits an indifference or unwillingness to learn its lesson, it will be found of service to cover the cage with a dark-coloured cloth. If a piano or other instrument of music is used in the same room, or much noise made in the house, the bird will never do more than learn parts of words or sounds, and will generally be confused when induced to talk. Words of the English language are far more difficult for a Parrot to pronounce than German, Dutch, Spanish or Portuguese. The German language seems to possess the greatest influence on the Parrot's power of speech. There are numerous anecdotes given of the talking powers of the Grey Parrot, many of which go to prove the capacity of this species, but some are much exaggerated. A Grey Parrot is certainly the most intelligent of all cage-birds, and when carefully taught at an early age much may be expected from it. It is to be regretted, however, that their first teachers are generally sailors, who often teach them such words as are not heard in polite society.



LUSCIOLA RUBECULA.

THE ROBIN

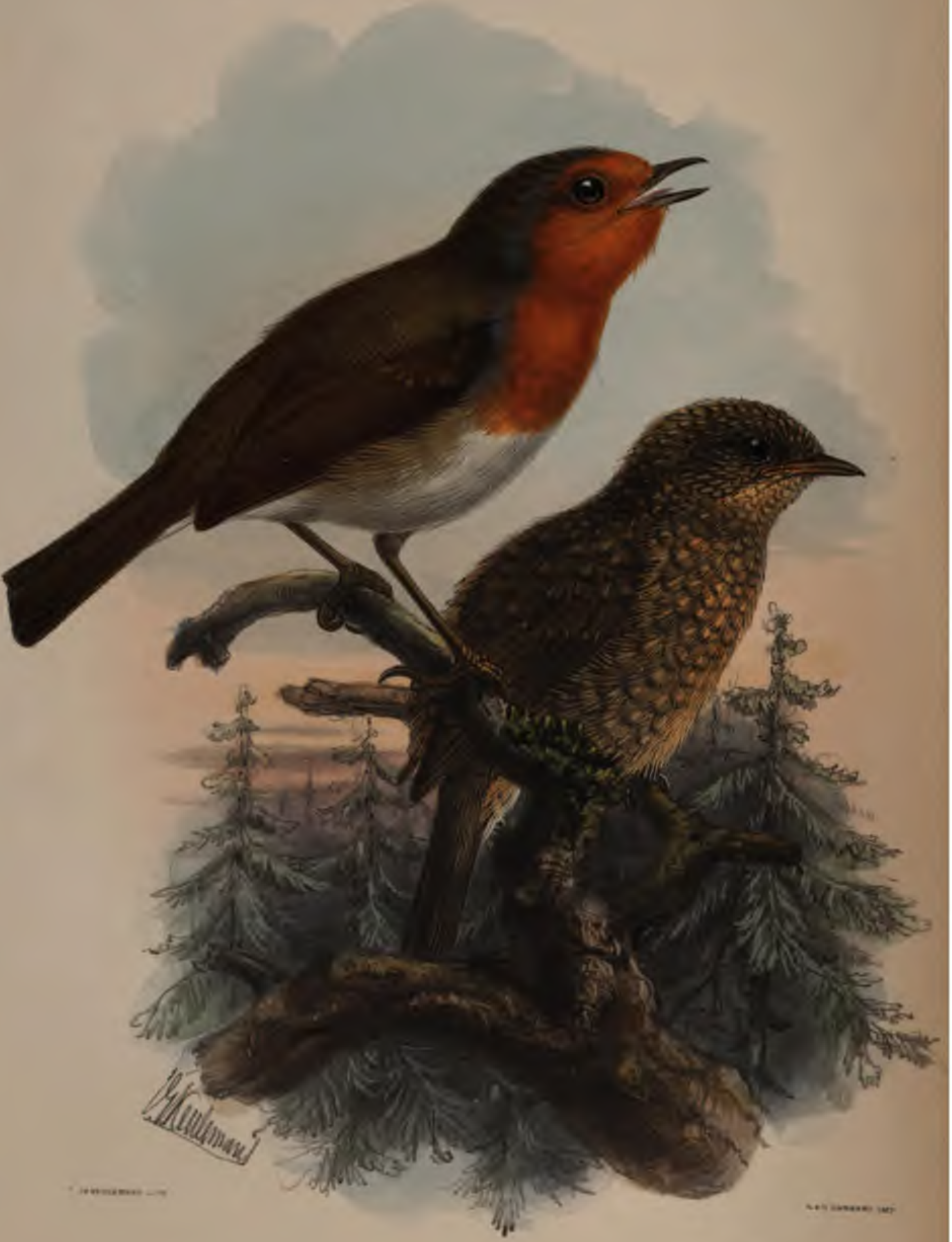
(Lusciola rubecula).

La Rouge Gorge (French).	*Das Rothkehlchen* (German).
Papinho (Portuguese).	*Roodborstje* (Dutch).

Yami, Yamaki (Greek).

The Robin is the most common of our native songsters. Nowhere is it so generally known and so numerous as in England, and Blyth's name of *Rubecula familiaris* would be very applicable, were it not that in the other parts of Europe the Robin is far from being so familiar a bird. Although generally regarded as a *Lusciola* or species of *Sylviæ*, many ornithologists have considered it as belonging to the *Saxicolinæ*, which includes the Robin, Bluethroats and Redstarts.

The habitat of the Robin is the whole of Europe, extending to the most northern inhabited parts; North Africa and Asia Minor. During certain seasons of the year it is found in Nubia, the islands of Teneriffe and Madeira. The Rev. H. B. Tristram, in his report on the Birds of Palestine, observes, "The Robin is very common in all parts of the country; but not one was seen after the end of February." This shows that most probably the Robin only visits Palestine to winter. Sonnini says, "The Robin, which is called by the Greeks 'Yami' or 'Yamaki,' arrives in the Levant about the month of October. I have seen them there till the beginning of March, in company with the Redstarts, frequenting the rocks and bushes most exposed to the sun." Although the Robins migrate to the South of Europe and the North of Africa, many may be seen in England during the whole year; and it seems that this bird is a permanent resident here. It may also be observed throughout the year in Holland and Germany, but proportionally in much smaller numbers than in England, where it approaches the towns and houses when the cold season begins. There are many instances of Robins, when hungry, entering an open window to receive crumbs of bread. When snow has fallen and food becomes scarce, they may be seen sitting with puffed feathers in a window-corner or on a frozen flower-pot,



LUSCIOLA RUBECULA

leaving the nest, and those of a second brood do the same within a month: the change of colour gradually shows as the new feathers appear through the nestling plumage. This made me believe that the feathers themselves were gradually taking the adult colour, but by careful examination I found that an entire and perfect moulting takes place.

The plate represents an old male and a young bird in its first plumage.

The female is smaller, the eye is not so large, the orange not so bright, and the grey on the neck and sides of the breast not so distinctly distributed. The older the individuals, the brighter the colours, and the legs of old birds are darker than those of younger ones.

Robins being of a confident, as well as of an inquisitive nature, are easily caught with any kinds of traps, snares or nets; and in Spring many males will enter a trap cage, where a female is used as a call-bird.

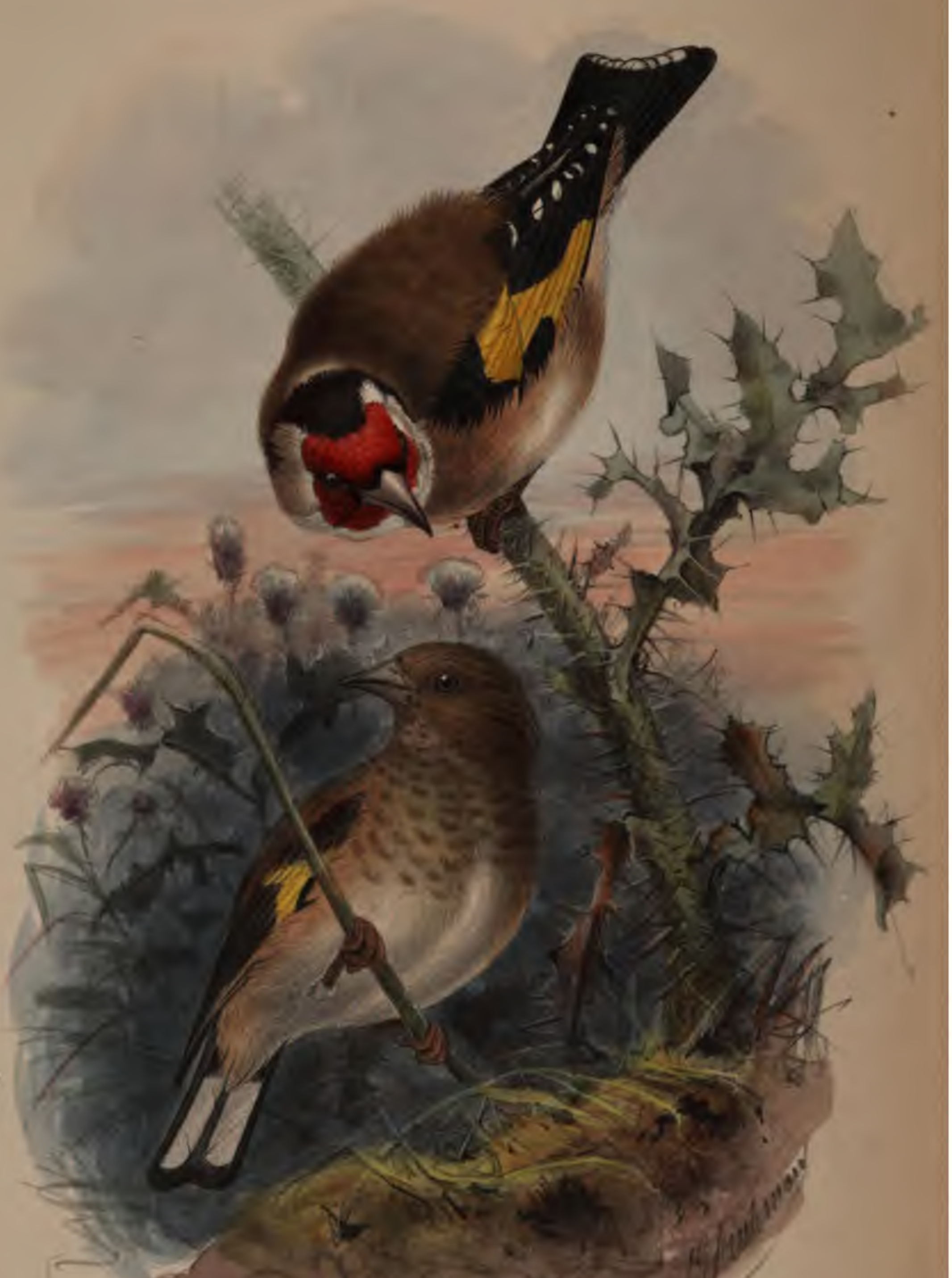
The Robin is very quarrelsome; each pair having its own particular domain. the male driving away those of its own sex and fighting with great determination.

In confinement they require a dark cage, with wires in the front only.

A very suitable food is made of hard boiled egg, dried bullock's heart or fresh minced meat, ants' eggs, crumbs of bread and some scraped carrot, the whole mixed together. It should be prepared in the following proportions: one small teacupfull of crumbs of bread, two teaspoonsfull of ants' eggs, and the same quantity of scraped carrot, one egg, and a piece of heart or meat of the size of an egg. This quantity will be sufficient food for a week for two Robins. Some moss-seed and boiled currants may also be mixed with it. It is desirable to give them occasionally some meal-worms or flies and spiders. Milk, when boiling and then turned with some vinegar and afterwards put into cold water, will form a kind of cheese, which is much liked by the Robins.

All the above mentioned kinds of food are suitable for Nightingales, Redstarts, Stone- and Whinchats, Warblers, Blackcaps, Woodlarks, Whitethroats, Bearded Tits and Pipits.

Robins, if carefully tended, will live for years in confinement. They are generally very restless during a greater part of the autumn and spring, and many die after a short illness at these seasons.



J. G. KEULEMANS LITH.

C. & A. HANHART IMP.

CARDUELIS ELEGANS

THE GOLDFINCH

(*Carduelis elegans*).

Le Chardonneret (French).	*Pinta Sylva* (Portuguese).
Der Stieglitz (German).	*Cardellino* (Italian).
Putter, Distelvink (Dutch).	*Karedrino* (Greek).

THE Goldfinches may be regarded as forming, with the Siskins (*Chrysomitris*), a subgenus of the Finches (*Fringillidæ*), and constitute a distinct group of birds, differing from the other *Fringillidæ* by their slender beak, short but strong legs, and by the form of the wing, of which the *primaries* are elongated.

The habitat of the Goldfinch is the whole of Europe (with the exception of the Northern Region), North Africa, with the Canary Islands and Madeira; it has also been observed in Asia Minor. It is found in Spain, Portugal, Italy and Greece, throughout the year, and, during the cold season, large numbers from the northern parts visit those places to winter. It has been observed tha tthose Goldfinches which have bred in Northern Europe invariably winter in the South of that continent. Their migrations are very irregular, and seem to be governed according to the supply of food: in this country flocks of from four to ten individuals are seen all the year round.

In some districts, where olive trees, alder-wood, poplars and thistles are found, the Goldfinch is generally very common; but in thick forests, fir or pine trees, or pine woods, mountainous parts or marshy countries, it rarely occurs, and is never found breeding in such localities. Mr. Harting, in his 'Birds of Middlesex,' speaking of the Goldfinch, says, "At one time very common, but now seldom seen, owing, no doubt, to the increased cultivation."

The principal food of the Goldfinch, during the summer, consists of insects, such as spiders, gnats or small caterpillars, as well as seeds and grains, like those of the thistle, chickweed, grass, nettle and buckwheat. In the spring and summer they often feed on the young sprouts of herbs and trees. In autumn they feed on alder and other seeds, which they find on the ground. While picking the seeds from the alder or birch they hang on the twigs in a manner similar to that of the Tits, and so pluck the seeds out of the cones. In places where those seeds or trees are plentiful the Goldfinch may be seen in great numbers, in company with Siskins and Redpolls.

There is scarcely any difference in the colour of the sexes; the male is distinguished by the black band of feathers round the bill and before the eye, by being rather stouter and of brighter colour than the female, though a young male of the same year is not so bright as an old female; in such case there is nothing but the black feathers round the beak to distinguish the sex. The plate represents an old male and a young bird in its first plumage.

Young Goldfinches change their colours at the autumn moult, and in some cases the moulting lasts as long as seven weeks, whilst others complete their moult within a month. After throwing off their juvenile plumage, the colours are not quite so bright as in an older bird; the beautiful plumage does not appear until the next spring. The beak of a young individual is a little darker, while the spots on the wing and tail feathers are more rufous than in old ones.

The Goldfinches pair in May, and the first eggs are rarely laid before the end of that month. They seldom breed more than once during the year, although occasionally there may be a second brood. The nest is built upon or amongst the branches of the elder, alder, poplar, apple or pear tree, at an elevation of about fifteen feet from the ground, and is so carefully concealed as not to be easily discovered. The female alone works at its construction, employing moss, thin roots, dried small leaves and spider-webs for the outside, whilst the interior is lined with horse-hair and thistle-down or willow-blossom. The size of the nest is from four to five and a half inches diameter and from three to four inches high. It is carefully and compactly interwoven, round, and widely opened. The eggs are four or five in number, of a greyish white, with a tinge of blue, spotted with purple and brown, chiefly at the larger end. The time of incubation is thirteen or fourteen days, and only the female sits on the eggs. The male bird brings her food, and when the young ones are hatched out he assists in bringing them up. The male Goldfinch is seldom found close to the nest; it is usually to be heard singing in the neighbourhood, and does not seem to be overwhelmed with paternal cares.

Its song, although rather sharp and rattling, is pleasant and gay, and may be heard the whole day. The song of the Goldfinch is composed of a series of hasty, successive, rattling syllables or tones, suddenly interrupted by the prolonged call-note.

Goldfinches, when migrating and flying in flocks, are easily caught with nets. In the spring the males will not hesitate to settle on a trap-cage when a hen Goldfinch is used as a decoy-bird; and by fastening limed sticks round about such a cage many males may be obtained during the pairing time.

The Goldfinch does not at first readily become accustomed to confinement, the sudden change affecting it much, and many die within a few days of being taken: they do not refuse food, but it does not seem to do them any good, and in a short time they present the appearance of having been ill for weeks. I have caught Goldfinches in autumn, which in the course of two days lost nearly half their weight. Many quickly succumbed, and out of twelve individuals taken one day seven were dead the next morning. I afterwards tried some other food, and gave them maw-seed and bread made up in a paste with milk, but neither hemp nor canary seed. I found this preferable, and always fed my freshly-caught birds with such food. A few days after, some chickweed and crushed hemp-seed was given, and the birds thrived very well.

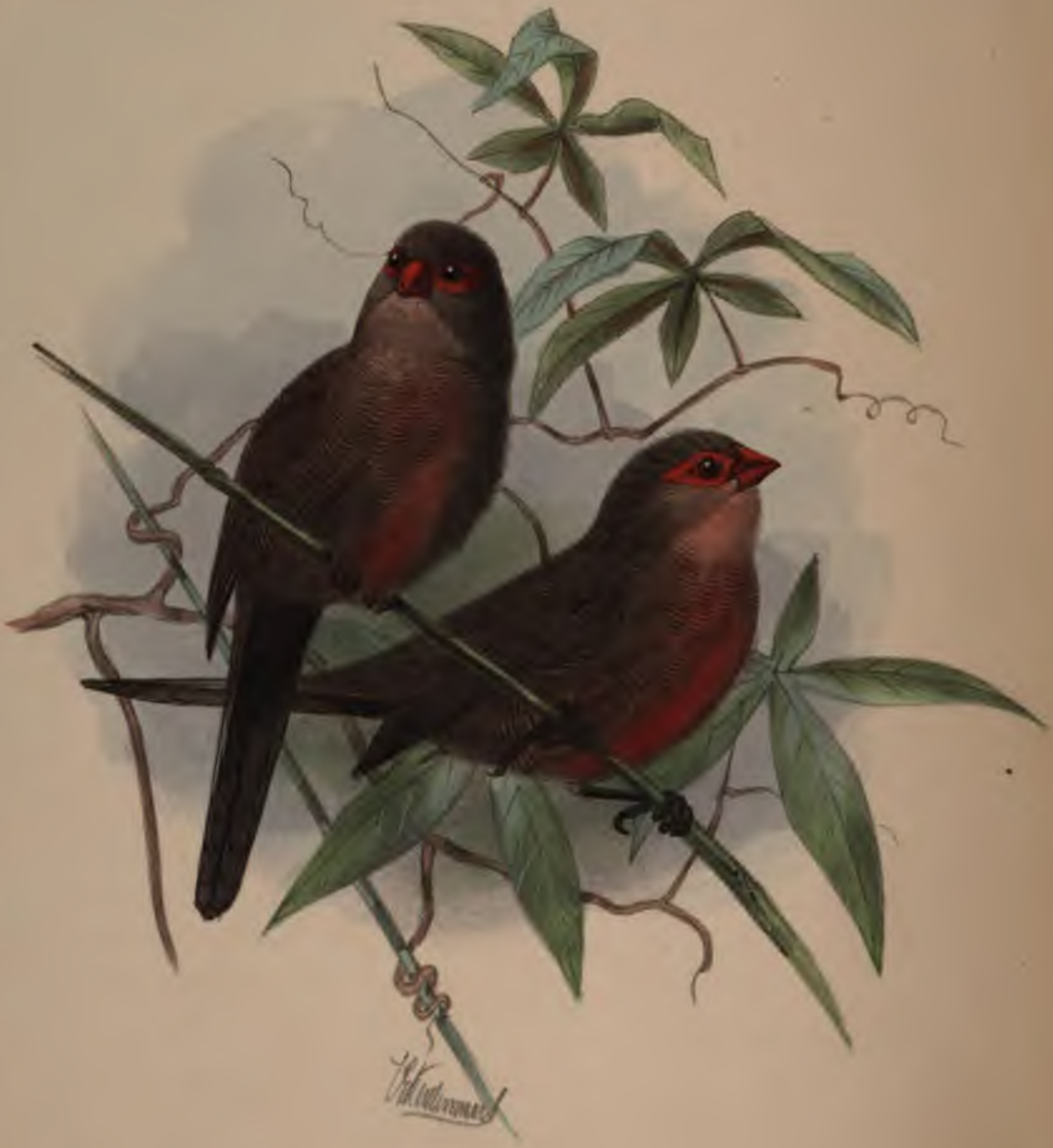
Once get these birds accustomed to the cage, and there is a probability of their living a long time: instances have been known of the Goldfinch reaching an age of five and twenty years. The first disease of old age is blindness or weakness of the sight.

In a cage with other birds the Goldfinch is quarrelsome, and always fights the weaker species: though it does not scruple to attack the Hawfinch, with Siskins and Greenfinches it agrees tolerably well.

A male Goldfinch that has never paired in the wild state will often breed with a hen Canary; but a cross between a hen Goldfinch and a cock Canary is extremely rare.

Varieties of Goldfinches do not frequently occur, although occasionally albinos have been caught. In some Goldfinches yellow feathers are seen on the ear, and in many individuals, after a long confinement, the red face turns to a yellowish or sometimes greenish brown.

In some parts of the Continent, and chiefly in Holland, the Goldfinch is taught a variety of tricks, such as drawing up water, in a miniature bucket, for drinking, or opening the lid of the box containing its seed: for this accomplishment the name of "Well Drawer" has been bestowed upon it.



J.G. KEULEMANS LITH.

M & N HANHART IMP.

ESTRELDA ASTRILD.

THE ST. HELENA WAXBILL

(Estrelda astrild).

Le Senegali ondulé (French).
Gingerotte (on Santiago)
Boca vermelho „ Portuguese.
Pàrdal de Senegal (on San Thomé)

This beautiful little cage bird is an inhabitant of nearly the whole west coast of Africa and the adjacent islands. Formerly it was very common on the islands of St. Helena and Ascension, but, owing to increasing population and cultivation of the land, the number of these birds has much diminished. On the island of Santiago (the most southern and largest of the Cape-de-Verde Islands) it is only to be found in some of the marshy localities along the rivulets. As water is becoming rather scarce on this island, there are but few localities where seeds and water-plants are found, which is, most probably, the reason why this little bird, at the present, is much less common there than it previously was. It is most abundant on the Island of San Thomé (St. Thomas), in the gulf of Biscaya, where it is found in the extensive marshes and bushy valleys. It is always seen in flocks, consisting of many individuals. Sometimes other species of small finches join them, forming together immense colonies: such a flying troop, when seen from a distance, looks like a dark cloud. There are generally three different species of birds together, *viz.* the Redheaded Weaver-bird (*Ploceus erythrops*), the Hooded Grosbeak (*Spermestes cucullata*), and the above-named Waxbills.

The St. Helena Waxbills are of an exceedingly lively disposition: they are always seen climbing on the highest grass-stems, creeping like Wrens through the reeds or herbs, or hanging on the waving grass-stems to eat the seeds. They do not fly much, and seldom leave a locality unless disturbed. When amongst the herbs and bushes they continually utter their soft, but distinct call, "*tchunk-tchunk.*" After having sufficiently satisfied their hunger, they sit and rest for a short time, and then off again. I have often seen about ten individuals on a large grass-stem, sitting so close to each other that they looked like one gray mass: this number is just sufficient to bend the stem horizontally, which is the easiest direction for a bird to perch; and I have often observed that, as soon as one has settled and secured his balance on a grass-stem, others come and place themselves at his side, so as to bend the stem by their own weight.

Their food consists chiefly of grass-seed, which they take from the stem while unripe and green. It should be observed that the grains of many of the tropical grasses are much larger than those of the summer rape or of the millet.

The male is a little stouter, and of a brighter red on the under parts, than the female. The young ones are of a grayish brown, a little darker than the parents, the stripes are less distinct, and the red plumes wanting. The beak is brown, and becomes gradually red.

The nest is, in proportion to the minute size of the bird, very large and high: it is composed of dry grass very roughly and carelessly arranged, the hard stems coming outside, while the thinner and softer parts are turned inwards and used as lining; it is about eight or nine inches high, by five to seven inches broad, and placed on the branches of thorny bushes among reeds or shrubs, and sometimes in higher trees—as the orange. On Santiago the nests are often found in the orange trees, which are situated close to the water-side.

The eggs are generally six in number, of a dirty white, with some dark rufous spots on the larger end. The young birds may be seen flying with the parents long after they have left the nest. There is no regular breeding season, owing to the continuous summer of those charming tropical countries.

On San Thomé the Waxbill is rarely disturbed; but, on the continent of Africa, they are caught in large numbers, and nearly every vessel, sailing from those parts, brings large numbers of this bird to Europe.

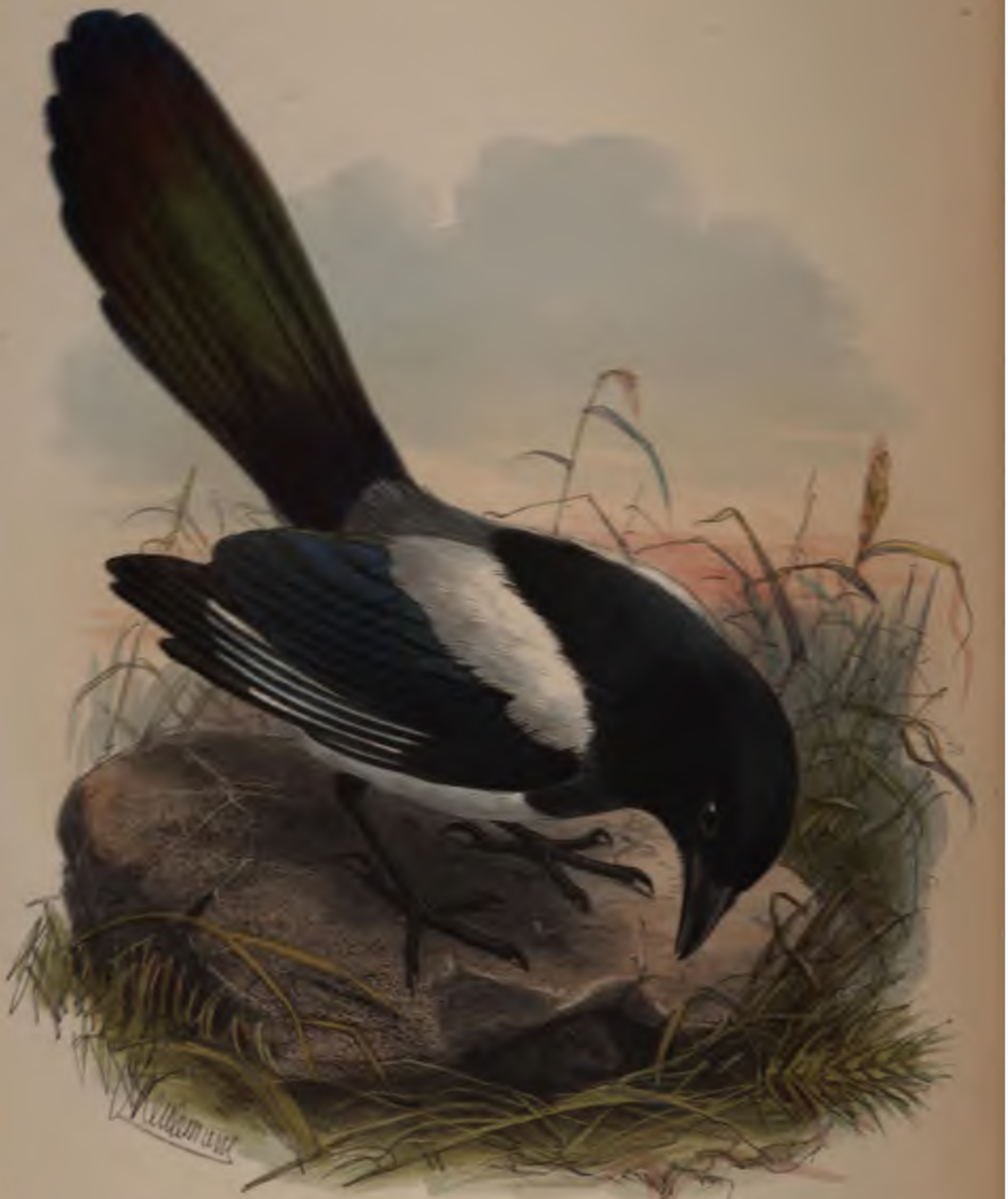
While at the Cape-de-Verde Islands, I met with a bird-catcher, a native of Bordeaux, who every year makes the voyage from France to Senegal for the purpose of catching cage birds. He uses large silk nets, which are placed on the ground round about the spots where the birds come to drink and bathe; the low herbage is cut away, a clear space made, and the cages, with decoy-birds, placed under the nets. The localities suitable for such captures are valleys, or overgrown plains, where water is not very abundant. In 1864 this man caught over five thousand birds within three months. On his return to France he had to stop at St. Vincent (one of the Cape-de-Verde Islands) to await the mail steamer, which, having met with an accident, arrived three weeks behind the expected date. In the meantime the food for the birds was exhausted, and no other to be found on the island. I advised the man to let some of them fly away, as he could easily catch them again afterwards; but to this he was naturally not much inclined, and consequently many of the birds died through want of food. Some ground maize-corn was given, and they seemed to like it; but one night the sacks of corn attracted the rats, who made holes in the wooden house and in the cages. The next morning, at daybreak, many of the little prisoners escaped through the holes, and soon were outside in the grass-fields. I was surprised to meet some of them at liberty, and first supposed the man had followed my advice. I found some Banded Finches (*Amadina fasciata*), Silver-beaks (*A. cantans*), and lesser Waxbills or Senegalees (*Estrelda cinerea*) flying in the neighbourhood: they were chattering and very lively. Had not we been acquainted with the fact, we most probably had shot them, and described these species as belonging to the fauna of that island.

As a cage bird the Waxbill is much liked, and is very frequently found a denizen of the house throughout the whole continent of Europe: its food should consist of millet or canary-seed, and some fresh green, like chickweed or grass-seed.

As they are birds of social habits it is advisable to have as many as convenient in one cage, companionship rendering them more cheerful and lively. They do best in a large cage, with wires on all sides, which is to be preferred to a dark one.

The value of this bird is, according to the supply, from five to eight shillings a pair. In Lisbon they are sold at 400 reis (about one shilling and eightpence) each, and sometimes cheaper. .

They can stand the cold tolerably well, and may be kept outside the house; but, being inhabitants of the warm tropics, they would, of course, soon be killed when exposed to frost.



J.G. KEULEMANS LITH.

M & N HANHART IMP.

PICA VARIA

THE MAGPIE

(Pica varia).

La Pie (French). *Die Elster* (German)

MAGPIES may be considered as Crows with short and rounded wings, an elongated tail, and a short but powerful beak. The species of true Magpies do not differ much in colour from each other; and the North American, Chinese, Japanese, and Algerian species are so similar to our European Magpie, that it is only upon careful examination they can be distinguished the one from the other.

The Magpies are very generally distributed, being found in nearly every country: they seldom migrate far from their breeding places, unless severe and prolonged winters, with want of food, drive them away.

The range of our Magpie extends from far north in Norway, through the whole south and south-eastern parts of Europe. Sonnini, in his journey through Greece and Turkey, mentions the Magpie as being a resident in those countries, and observes that it is always found in localities where trees are abundant.

The Magpie prefers orchards to forests. It avoids the vicinity of towns, choosing rather to live near villages. It seldom visits mountainous parts, but has a predilection for meadows and grass-fields.

When in the vicinity of houses it is very cautious and always on the alert. When disturbed, by the approach of men or animals, it does not always fly far away, but settles at a distance where it supposes itself safe. It carefully watches every movement of surrounding men, and is sagacious enough to distinguish the peaceful labourer from the armed sportsman. Of the first it is only suspicious, and merely remains watching him; while for the latter it has great fear, and goes off at once, making a loud noise, not returning to the spot until the danger has passed away.

[illegible] protection, it may be seen close to the [illegible] and even walking quietly and without fear at a few [illegible] The same cannot be said of our English Magpies; they [illegible] and anxious. Few birds are so cunning as the Magpie, [illegible] to approach or to catch.

[illegible] respects we may regard the Magpies as useful to man, owing to [illegible] on mice, worms, and beetles; but, being almost omnivorous birds, [illegible] damage to orchards by picking and eating the fruit. They do much harm by stealing the young ones and eggs of our songsters; and also work great mischief among the young game birds; and a Magpie is certainly not a friendly visitor to the gamekeeper's domain.

Magpies are seldom seen alone, being generally in pairs, or, after the breeding time, in troops of from four to ten; sometimes as many as twenty may be seen together. When on the ground they walk very stately, moving the tail up and down with a quick and jerky motion. When in a hurry they jump very hastily, sometimes beating the wings at the same time, in order to make the jump more effective: when doing this they look much like "dancing."

When plenty of food occurs, they gather and lay up store between the slits or under the roots of trees. Dead beetles of the genus *Carabus* and *Copris* are sometimes found among the branches of their nests. They are very fond of Cockchaffers (*Melolontha vulgaris*), often catching them in their flight and devouring them by hundreds.

Magpies are early breeders. They sometimes begin to build their nest as early as February, but seldom have it finished before the end of March. The nest is a large structure, covered with a roof of interwoven branches. The whole is composed of dead twigs, thorny branches, and roots. When the foundation is laid, both male and female bring clay and mud and plaster it over; every time when new materials are placed and interwoven some beaks full of mud or dung are masoned between. When dry it is a substantial strong structure, and capable of resisting storms and rain, to which the nest, by its situation, is often exposed; the opening is, in most cases, circular. The nest is usually placed on the higher branches of trees, and sometimes, when there is nothing to fear in the neighbourhood, in a hedge.

The eggs are a light greenish grey, spotted all over with grey and blackish various sizes. They are generally five in number, although as many as been found in one nest.

young ones do not differ in colour from their parents; even the beautiful y feathers are present at an early stage. When leaving the nest they have the tail shorter, and may be further recognized from the old ones by the bright crimson-red inside the beak.

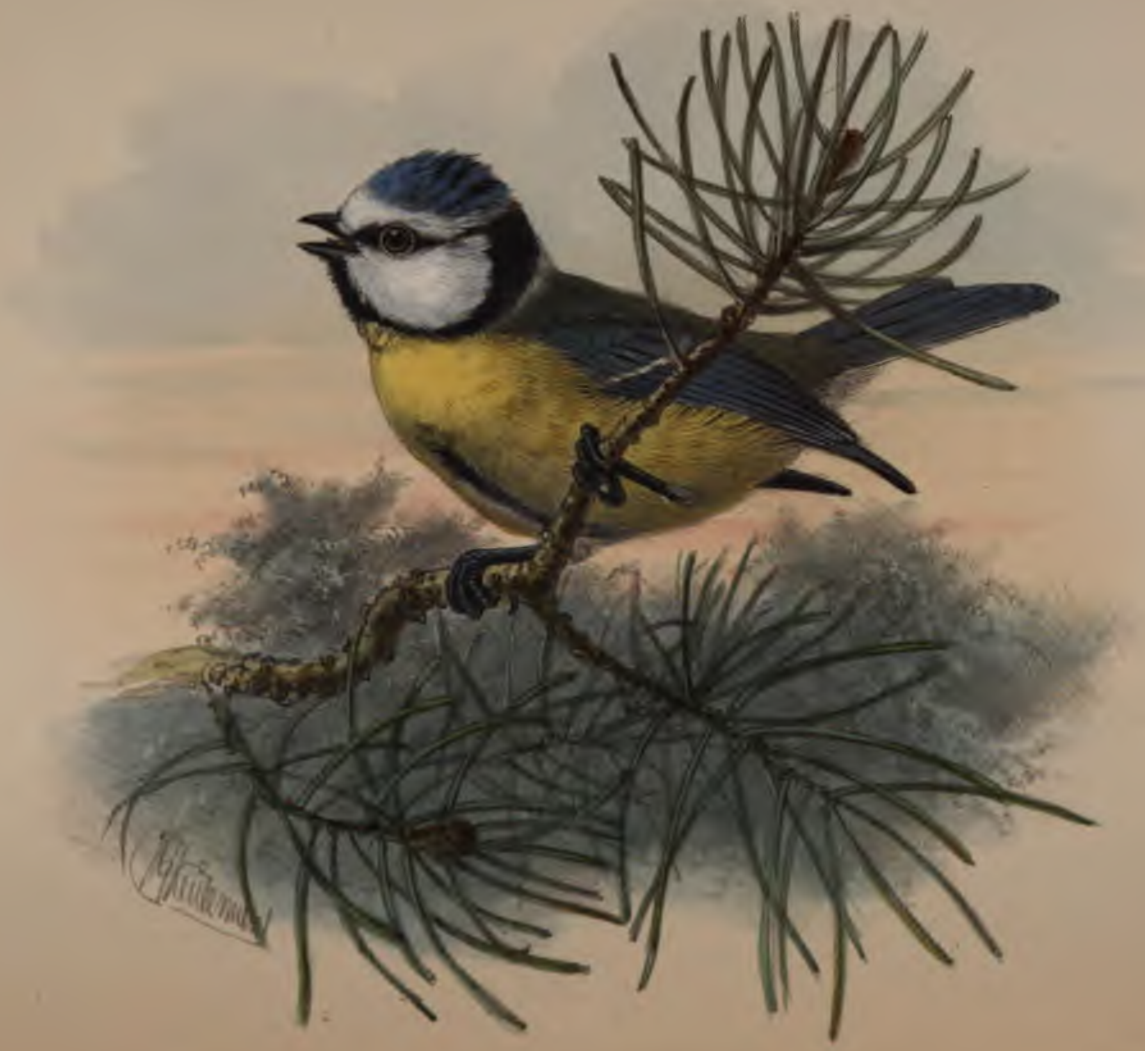
The sexes are alike, although the female is generally a little smaller than her mate. Old males are also a little brighter and more glossy on the wing- and tail-feathers.

In captivity the Magpie is a clever and very observing bird. It likes to walk at liberty in the room or about the house; and will share its meals with fowls, dogs, or cats. When kept outside it should be pinioned.

It will learn to imitate words, but seldom becomes an artist in that profession. Magpies in captivity have always been regarded as inveterate thieves, which they are in every sense of the word. In consequence of their natural inclination to gather up food, which consists chiefly of glossy beetles, they pick up all kinds of things that resemble beetles, either by their size or brilliancy; and this propensity accounts for the reason why Magpies are fond of appropriating and concealing any glittering articles, such as silver coin or objects of luxury. There are many accounts of objects having been missed, for which servants were responsible and regarded as the thieves, which were afterwards discovered to have been purloined by the Magpie.

A good food for this bird, in confinement, is bread and meat mixed or minced. Worms, beetles and boiled potatoes are much liked by the Magpies.

They are seldom caught when adult; and those seen in confinement have, in most cases, been brought up from the nest.



J G KEULEMANS LITH

M & N HANHART IMP

THE BLUE TITMOUSE

(Parus cœruleus).

La Mésange Bleue (French). *Die Blaumeise* (German).
De Pimpelmees (Dutch).

The Blue Tit is one of the most common of European birds, and is very numerous in various parts of England. It is found all over Europe, *viz.* northwards from Lapland to the whole south and south-eastern parts of that continent. It also occurs in Asia Minor.

The allied European species are the Ultramarine Tit (*P. ultramarinus*) and the Grey Tit (*P. cyaneus*); the first inhabiting Algeria and visiting the South; the second found in Siberia and sometimes occurring in the North of Europe.

Tits (*Parus*) are distinguished by their long and soft plumage (their size chiefly existing in their heavy feathers); by their conical, sharp beak, of which the base and nostrils are covered with small hard plumes. In the Tits the legs are strong, muscular, and of moderate, if not rather small, size; the tarsus covered in front with distinct scales; the middle toe about the same length as the tarsus. The inner and outer toes are a little shorter than the middle one. The nails are strong and curved, but not very pointed; the wings rather short and rounded, the third and fourth quills being the longest. The primaries and secondaries are long in proportion to the length of the wing. The tail is of a moderate size, the tail-feathers of nearly equal length. The upper tail-coverts are very short and soft, and almost concealed by the long and downy plumes of the back.

The sexes of the Tits do not differ much in colour, while the plumage of young individuals is not so clear and bright as in the adult birds. They make their nests in holes of trees, and lay a great number of eggs, which are of a milky white, with rufous spots on the larger end. They feed on insects and seeds. In confinement, and even in the wild state, the larger species often devour the brain and flesh of dead birds. The voice is clear, whistling, hissing, and there is a great similarity in the sounds and notes of the different species. Tits distinctly express their passions by various kinds of sounds: and a practical observer may easily distinguish whether a Tit is gay and contented or excited and angry. During the pairing season they utter a soft and warbling kind of song.

Tits are very sociable in their manners, and are seldom seen alone. During the winter they travel in flocks from one place to another, often returning in the afternoon to the place they left in the morning.

They are bad flyers, and when on the wing, seldom fly more than about fifty feet at once. Usually they go from bush to bush, never flying much above the height of the trees. They seldom settle on the ground, but jump very quickly on the larger branches. When meeting a hole in a tree, they never leave it unexamined, and they may be seen creeping into the hole and remaining there for a long time.

In the autumn and winter different species of Tits meet together, sometimes forming flocks of more than fifty individuals: the Blue Tit is generally the most abundant species of such a wandering colony. It occasionally comes into the towns, and is often seen climbing the walls of houses and chimneys.

The sexes of the Blue Tit do not differ in colour, although a very bright-coloured specimen generally turns out to be a male bird.

The young ones are of a yellowish tinge, and have the appearance of being washed over with dull yellow. What is white in the old bird looks yellowish in the young one; and the blue in the adult is a greenish in the juvenile plumage. They moult soon after leaving the nest, and then have the colours of their parents, although paler.

The Blue Tit is found breeding in the middle of May, and the second time in the beginning of July. The nest is frequently made in a hole or slit of the pollard or topped willow. In some cases (when there is more than one hole in the same trunk) it uses the upper for coming in, the lower for going out, or it takes advantage of escaping, when danger (a birdcatcher's hand, for instance) threatens the other. The opening which leads to the nest is in most cases so narrow that it seems almost impossible for a bird of that size to enter it. There is an instance of a pair of Blue Tits having built a nest inside the letter-box of a deserted country house.

The nest of this species is composed of green moss, dead leaves, roots, hairs and feathers, which, according to the space of the hole, are laid on the bottom or along the sides, and are carelessly arranged over and among each other. In a spacious hole the nest is better finished.

The eggs are from seven to eleven in number, of a milky white, and at the larger end covered with rufous spots. I once found a nest in which were four almost full-grown young birds, together with three nearly-hatched eggs. A similar case was observed by a birdcatcher this year (1870) in the vicinity of London.

Both parents assist in hatching the eggs; at least I have seen one leaving the hole, and the other (without any tail) going in, and remaining inside for more than an hour.

The young ones are fed with insects, such as spiders, soft caterpillars, ants' eggs, gnats and gentles; but not with hard-bodied insects, such as beetles or flies. They remain in the nest for about twenty days, and then leave all at once, and fly round with the parents. I once found a nest with young ones which were old enough to fly, and on trying to take them out, they suddenly escaped through another hole. Late on the evening of the next day, it being then dark, I stopped one of the holes, and found them inside. I only succeeded in taking six individuals, notwithstanding I knew there were more. This proves that the young ones, after their first flights, do not forsake their nest, but return to it in the evening.

The old birds feed on insects and their eggs. Spiders' eggs they prefer above all other things, and these furnish them with good food during the winter.

Their call is very clear, and when contented they often utter a sound like "*tsee—tsee—tsee, e e e e e e*" (the latter *e's* thrilling). Although there exists great similarity in the notes or calls among the Tits, the above sound is proper to the Blue Tit, and is never heard from other species. The young birds are much weaker in their vocal powers; although they have the same note as their parents, the sound is not so shrill, and is very hoarse.

Blue Tits, being of an inquisitive disposition, are easily deceived and soon fall victims to traps, limed sticks or snares. Tits are exceedingly lively and gay: such qualities often occasion imprudence, and a Tit (especially a Blue one) is a very imprudent little bird; with a decoy Tit in a trap-cage many may be obtained in autumn and winter. Their inclination and desire for social life makes their capture easy; while by their natural touchiness they soon get irritated, and then often commit imprudences. The Little Owl (*Strix noctua*), is their greatest foe, and by using this bird as a decoy, many Tits may be caught, if limed sticks are placed round about this Owl. The Tits, on perceiving it, quickly come from all sides, one calling another. They come nearer and nearer, always whistling and chattering. To their apparent amusement, the Owl becomes angry, and assumes all kinds of funny attitudes: being teased on all sides, the Owl suddenly makes a sally, whereupon the Tits at once retire, but again reappear with renewed courage and intrepidity. At last they settle on the limed sticks placed round about the Owl, and some minutes afterwards the sportive little vexers find themselves in a cage, trying to clean their legs and feathers from bird-lime.

A freshly-caught Tit may not inaptly be compared to a lost child: it remains, sometimes for hours, in a confused state, almost motionless, looking without seeing anything, and apparently does not fully realize its captivity. Being in the habit of constantly feeding throughout the day, the stomach soon wants food, and the captive, urged by hunger, begins to take a meal-worm or a hemp-seed. If it does not take food soon, the best remedy is to restore it to liberty; otherwise it will die within a day.

In confinement they soon get tame and familiar, although they will never fail to avail themselves of any opportunity to escape.

Blue Tits may be fed on crushed hemp-seed, a piece of walnut or hazel-nut, minced-meat, mutton-suet and fat of all kinds; also meal-worms, gentles, wasps, spiders, crumbs of bread, honey, boiled rice, potato and over-ripe pears. They will drink milk and even coffee. Some will prefer one kind of food to the other; but Tits are not very particular about their meals, although they like a variety of food. They seldom live more than a year in confinement.

PROSPECTUS.

THE love for birds, in a greater or lesser degree, pervades all classes of society; and in almost every dwelling one or more of these feathered favourites may be found, their graceful form and varied plumage, with in some instances their amusing manner and winning ways, offering attractions that few can resist.

For those in whose dwellings these denizens of the woods find a home, the author proposes to publish an illustrated work that shall give the results of his own personal knowledge in the rearing and proper treatment of birds in confinement.

For many years much of his time and attention has been devoted to observing and studying this most engaging class of the Animal Kingdom; and during his residence in foreign parts he not only carefully observed them in the wild state, but had likewise a large number in confinement, so making himself acquainted, from actual experience, with their habits of life.

The author is induced to believe that his projected work will find favour with those who possess birds, inasmuch as the information it contains has been gained by his own personal study.

The work will give all requisite instructions for catching and rearing different kinds of birds.

A complete description will be given of the habits and proper treatment of such local or foreign birds as may be kept in cages.

Each description will be accompanied by a coloured lithographic Plate, representing the male bird in its perfect plumage. In those species where the sexes or ages present a difference in coloration, the female or young ones will also be figured; and when it is necessary the birds will be represented both in their summer and winter plumage.

A great feature in the proposed work is that all the drawings of the birds represented are made from the living object, whereby correctness in attitude, form and colour has been ensured.

The work will be published in Monthly Parts (at Five Shillings each), containing six Plates and from twelve to twenty-four pages of letter-press.

It will be brought to a close in *twenty* Parts, the whole work containing *one hundred and twenty* Plates, forming *two* Volumes.

The first Volume will contain an extra Double Plate of different kinds of traps, nets, snares and cages.

It is proposed that the first Part of this work shall be published early in January, 1871.

E. NEWMAN, PRINTER, 9, DEVONSHIRE STREET, BISHOPSGATE.

Vol. I., Part 2.] [April, 1871.

A NATURAL HISTORY OF CAGE BIRDS.

BY

J. G. KEULEMANS,

LATE ASSISTANT TO THE MUSEUM OF NATURAL HISTORY OF LEYDEN.

WITH

SIX COLOURED PLATES DRAWN AND LITHOGRAPHED BY THE AUTHOR.

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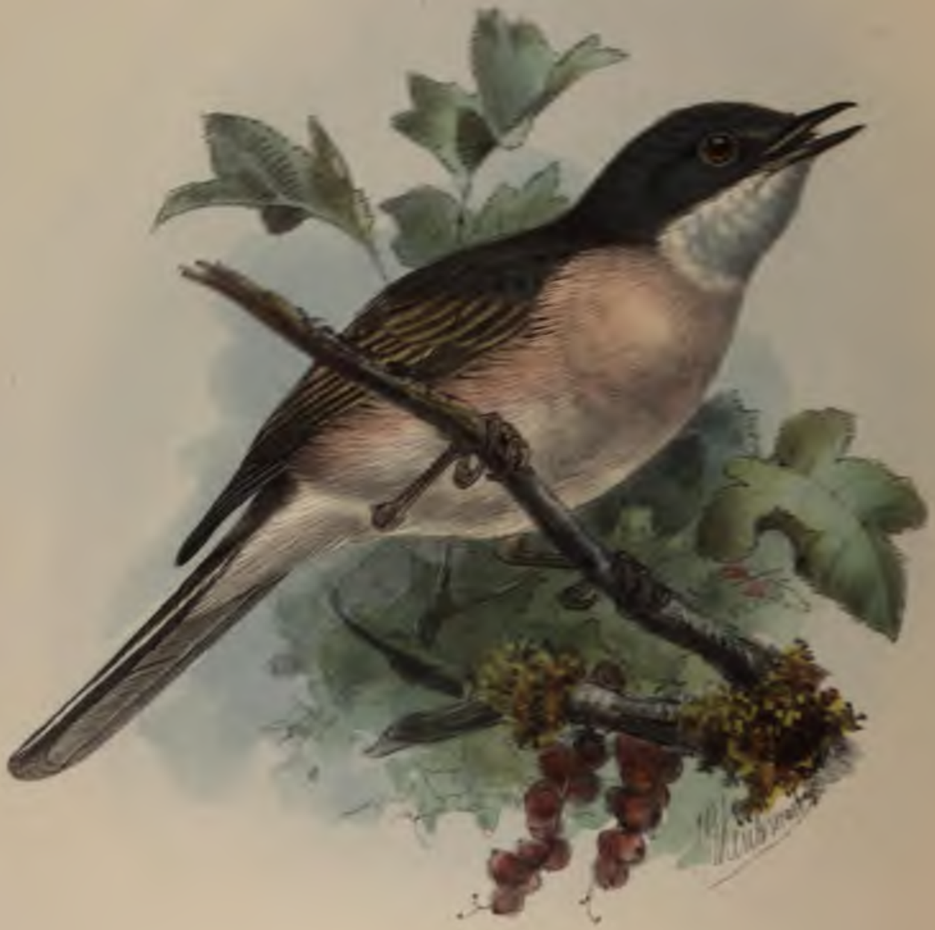

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CURRUCA CINEREA

THE WHITETHROAT

(Curruca cinerea).

La Rousselotte (French). *Die Grasmücke* (German).

THE Whitethroats form a characteristic group of birds among the *Sylviæ*, and represent the sub-genus *Curruca.*

In Europe we find several species of this group, two of which occur in this country, the first and the most numerous being the bird about to be described, and the other the Lesser Whitethroat (*Curruca garrula*). Both species are summer visitants, and generally come, and leave us at about the same time of the year. Early in April the males are seen creeping and jumping through the hedges and bushes, occasionally uttering their gay and warbling song. About ten or fifteen days later the females arrive, and pairing commences shortly after.

The common Whitethroat begins to build its nest about the end of April, and the first eggs are laid early in May.

The nest is composed of dried grass, fibres, roots, and often dead leaves; for the interior, horsehair is sometimes used, although generally there is no special lining. In size it is rather large, very loosely interwoven and roughly finished. It is in most cases situated amongst nettles, high grass along the shore, or between the roots of alder and willows. Sometimes the nest may be found in a bramble-bush, apple or pear tree, and (if the birds are nesting in an orchard) in a plum tree. Whitethroats have a great predilection to build either in nettles or plum trees.

There are usually two broods, the first in May and the second in July. In the first there are nearly always five eggs, while in the second seldom more than four are found. They are of a dirty white, covered with greenish and brownish spots; on the larger end the spots are darker and more numerous, forming a distinct circle.

I once had a nest in my garden (in a standard rose tree). The birds soon became very tame, and when I placed meal-worms on the ground both male and female came very close to me to pick them up. The first egg was laid on the 5th of May, and the fifth and last on the 9th of the same month. I could see the eggs lying in the nest, and approached very close to it several times a day, without the birds appearing to be disturbed or inconvenienced. After thirteen days' incubation I found only four young ones, one egg remaining unhatched, having probably been injured, as I had once touched the eggs. I kept feeding the parents with meal-worms and ants' eggs, and afterwards distributed a handful of the ants' eggs every day. The young ones left the nest when about twenty days old, and were in the habit of hovering in and about the garden all the morning. In the middle of the day they hid among the foliage of an ivy-bush, sitting close to each other, an old one taking the outside place; often the parents sat one at each end, and the young ones between them.

I have found many nests of Whitethroats in Holland, Belgium and France, and have met with several, in which a Cuckoo's egg was present. In 1867 I found three nests, in each of which was a Cuckoo's egg among those of the Whitethroat.

In Holland it is chiefly to this species that the Cuckoo entrusts the hatching and rearing of its progeny; the reason of this most probably being that the Whitethroats are in the habit of leaving their nests for some time unwatched, even when the eggs are almost ready to be hatched, thus giving the Cuckoo ample opportunity to deposit its egg. Those who are acquainted with the habits of the Whitethroat will have observed the same fact.

The young birds closely resemble the adult female, the only difference being that the plumage is paler, and that the eyes are darker.

The sexes do not vary much in colour, the female being of a dull or ash-coloured grey on the back and head, a little rufous on the wings, and dirty white on the under parts. In the male the head is of a purer grey, more of a light slate-colour; the throat and eyebrows are pure white; the breast and sides of a light pink, and of a brownish rufous on the wing-feathers. The iris is also a little brighter, being yellowish brown; that of the female is rufous, while in the young bird it is a dark greyish brown.

The food of the Whitethroats consists of insects, principally small caterpillars of the genus Tortrix, which, during the summer months, they find in numbers among the leaves of the nettles. They catch flies, and often pursue them on the wing. Sometimes it occasions the Whitethroat a great deal of trouble and time to catch one. I have often seen them pursuing a fly or gnat, and repeatedly missing it, until at last a more adroit Flycatcher seized the prey. They will eat blackberries, and pick holes in plums and pears. For cherries and red currants they have a great partiality, but elderberries, which are a favourite food of Blackcaps and Robins, they seldom take, unless insects have become scarce.

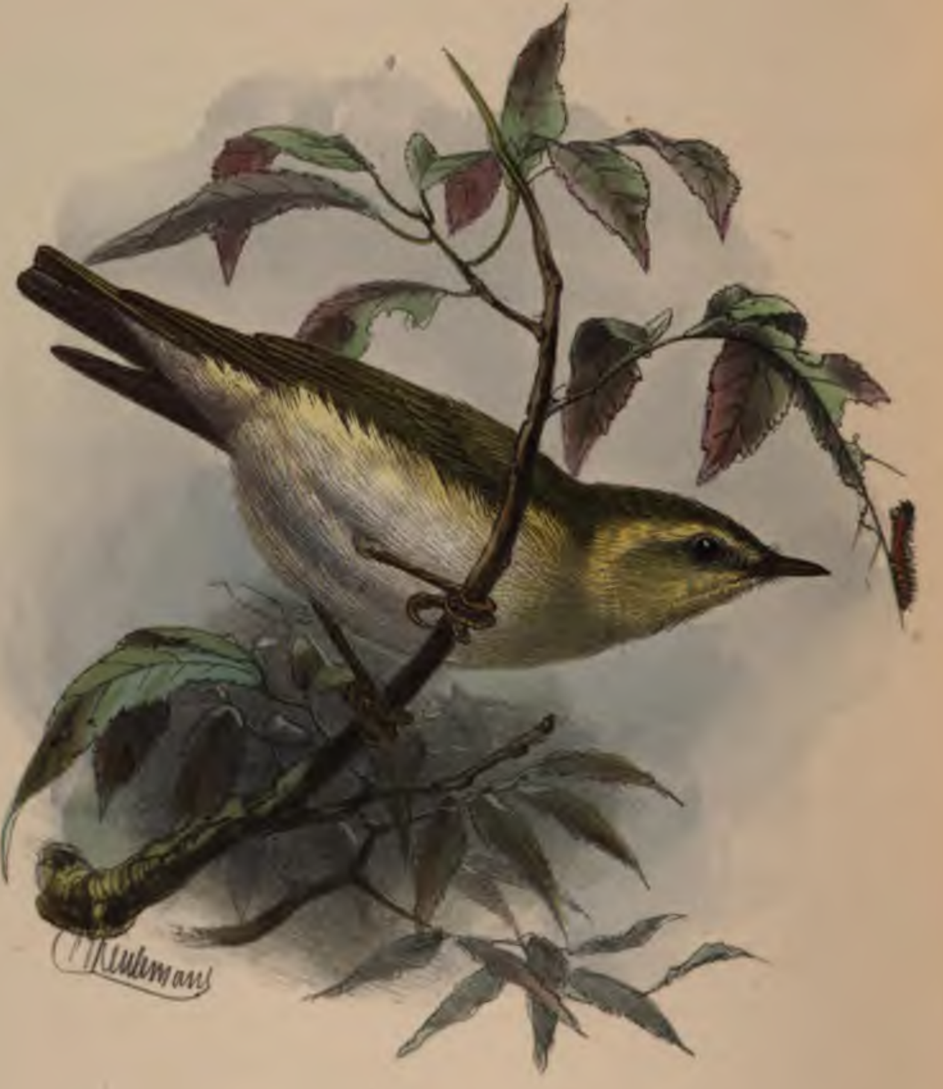
The male has a rather monotonous, though joyous, warbling song. Its song is very hurried, and it often stops abruptly in the middle. At intervals it utters its note, "*tèk tèdèk*," and then begins warbling again. Like all other species of *Curruca*, it often hops, while singing, from branch to branch, sitting for a moment on the highest twig within its reach, and then suddenly flying up perpendicularly to the height of some five or six feet above the tree, without ceasing its melody. It sometimes remains hovering for some twenty seconds, and, as soon as it has descended, suddenly becomes mute.

The Whitethroats may be easily kept in confinement, by feeding them with the food mentioned in the description of the Robin; in addition to which they may have fruits and berries, which, when given, ought to be fastened to a twig and then placed in the cage. No fruit or sticky substance should be placed on or intertwined between the wires, as it makes the cage and the birds dirty, spoils their pleasing and elegant appearance, and at last makes them ill.

All insect-eaters require to bathe once a day, and their cages should be cleaned twice or three times a week. Fruit-eaters, or birds fed with fruit, should have plenty of sand or gravel in their cages, as their droppings are of a more liquid and putrefying nature than those of seed-eaters. Instead of gravel, blotting-paper may be used.

Whitethroats may be caught in a trap-cage or small spring-net, with a living meal-worm placed inside for bait; the cage to be placed on the spots they frequent. When, in the pairing season, a male is caught and used as a decoy, some females may be obtained. With a female in the cage males are soon captured: they frequently contend with each other who shall be the first to jump in, and it often happens that two are caught at the same time. They may also be captured with a horsehair snare, which is spread over the nest. All kinds of horsehair snares, when placed among the foliage, and some bait with it, may effectively be used.

The young ones can be brought up by feeding them on meat and hard-boiled egg, minced and mixed. As soon as they begin to feed themselves, some crumbs of bread may be mixed with the food. Gradually a food similar to that for the old ones should be added, and the meat and egg taken away, after which some meal-worms, berries or plums may be given.



J G KEULEMANS LITH

M & N HANHART IMP

PHYLLOPNEUSTE SIBILATRIX.

THE WOOD WREN

(Phyllopneuste Sibilatrix).

La Verderolle (French). *Der Laubsanger* (German).

Of the genus *Phyllopneuste* there are three species that visit this country, *viz.*, the Willow Wren (*Phyllopneuste trochilus*), the Chiffchaff (*Phyllopneuste rufa*), and the Wood Wren. All the known species of this genus are of a greenish shade on the upper parts, and yellowish or pure white on the under parts of the body. In most species there is a light streak over the eye; while in those which have yellowish under parts, the edge and the inside of the wing are always of a brighter tinge than the rest of the body.

All the species are, with respect to the distribution of colours, very closely allied, and many of them agree so much in shade of plumage that it is only after careful investigation they can be distinguished from each other.

The Wood Wren may be recognized by its having nearly the whole of the under parts white, by its long wings, and elongated tail-coverts. A closely allied species of Southern Europe (*Phyllopneuste Bonelli*) has the whole of the under parts glossy white.

The Plate represents the adult male. The female is sometimes a trifle paler, and the young ones are a little more greyish than the male. In all the species of this genus a similar external difference between the sexes and young ones is exhibited.

The range of the Wood Wren extends over the temperate and southern parts of Europe, but it does not occur in the North. It winters in Northern Africa, and arrives in England about the middle or end of April, leaving again at the beginning of September.

It has a great partiality for wooded localities, whence it derives its name. Some years it is very plentiful, while at other times it is rarely observed. It is generally seen alone, and the male may be heard singing at a long distance from its nest.

The Wood Wren is rather a late breeder, and seldom builds its nest before May. It is placed amongst high grass or mosses, and composed of such materials as are found in the immediate vicinity of the nest, which give it a close resemblance to the ground or place on which it is situated. The interior is lined with soft fibres, herbs and roots; but feathers (which are always present in the Willow Wren's and Chiffchaff's nest), are never used as lining. It breeds only once during the year, and lays from five to six eggs, which are in colour of a pinkish white, covered all over with very small dark red spots.

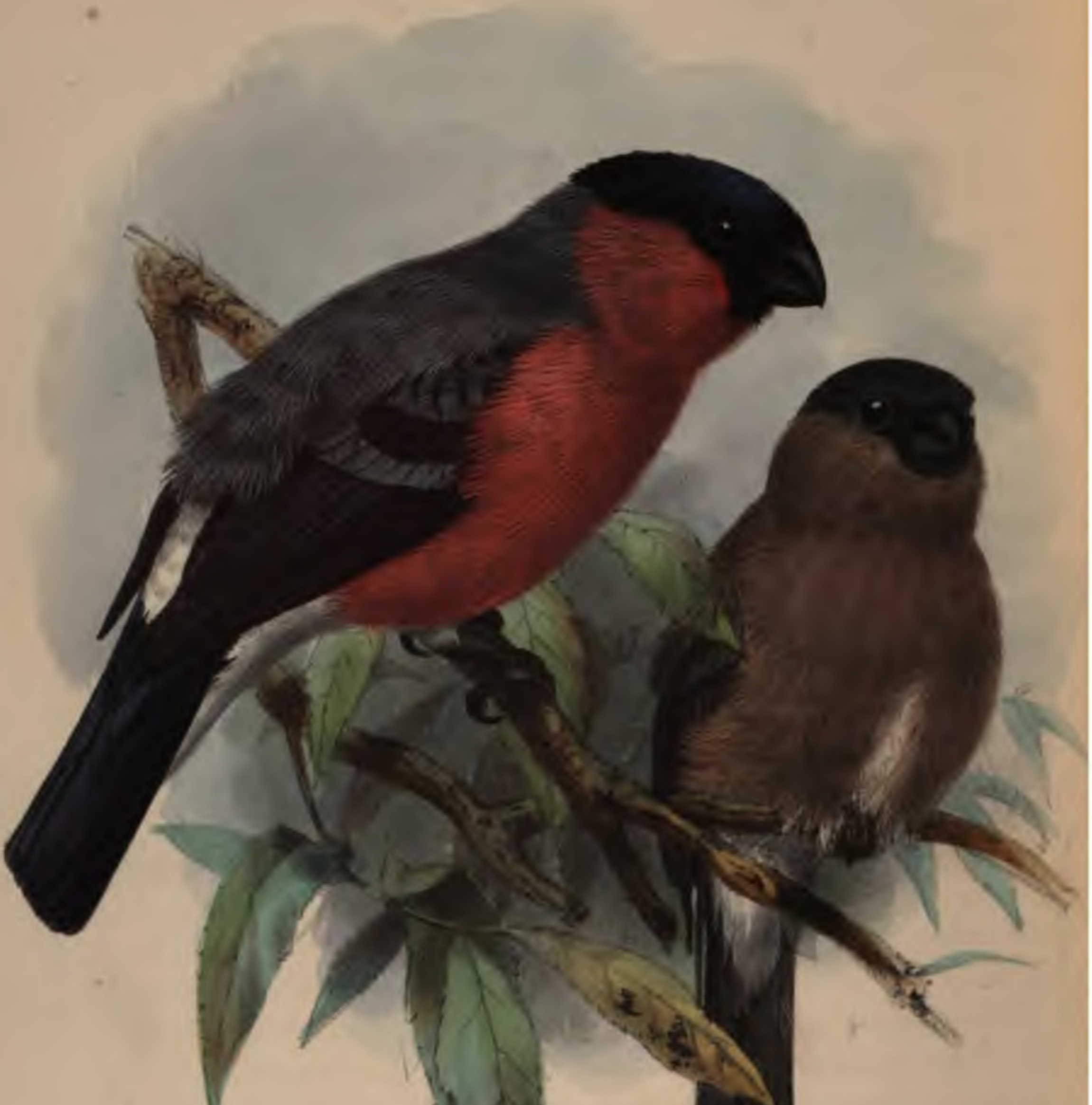
The young ones are fed with gnats or soft caterpillars. The old birds seldom take berries, confining themselves almost exclusively to insects; they do not take insects' eggs, and therefore do not arrive so early in spring as its congener, the Chiffchaff.

Wood Wrens are of a very lively disposition, and the males show great jealousy during the pairing season. They are indefatigable songsters, chiefly at the time when the females are hatching. A male Wood Wren, while singing, always shivers and beats its wings; it jumps continually from one branch to another, and then remains sitting for a while, the body erect and the neck straight forwards. The song is very pleasant, but rather short. It always sings the same tune, of which the first notes are repeated regularly and *andante*, but the remainder *prestissimo* and *staccato*.

The call-note is much like that of the Willow Wren, and may also be compared with the common note of the Redstart. The call-note of both those birds is like *foueet, fweet;* of the Wood Wren, *fouweet, fouweet.*

In confinement this little songster soon becomes very tame; it is always in movement, climbing up the wires or jumping from perch to perch. It should be fed on moist food, such as raw beef and hard-boiled egg minced, and mixed with ants' eggs. Flies and bluebottles will be most acceptable; and to gratify the little captive, and assist it in catching them, the cage should be placed outside the window, and a small piece of meat hung inside it. This attracts the flies, which are at once caught and swallowed by the bird; and by this means it will at times be so well supplied with insect-food as hardly to require any other.

In winter some meal-worms, and a little scraped carrot mixed with the meat and egg, should be given.



J. G. KEULEMANS LITH.

M. & N. HANHART IMP.

PYRRHULA VULGARIS.

THE BULLFINCH

(Pyrrhula vulgaris).

Le Bouvreuil *Le Pivoine* } (French).	*Der Gimpel* (German). *De Goudvink* (Dutch).

Bullfinches may be considered as birds allied to the *Fringillidæ*, but differing from them in the shape of the beak and legs, and forming a substantive characteristic genus, of which only few species are known. The common species of Bullfinch is found throughout Europe, and abundantly distributed in the central part: it is of rare occurrence in the south, while, according to the localities, two distinct races are found; one inhabiting the eastern, and the other the western part of that continent. The differences are based on the size of the individuals; the distribution of the colours and the difference between the sexes and young ones being the same in both races. Some ornithologists have considered them as distinct species, and named the larger one *Pyrrhula coccinea;* the lesser, or common, Bullfinch, *P. vulgaris.* The larger, or as it is commonly called the Russian Bullfinch, and of which the accompanied plate represents the male and female, inhabits Scandinavia, Russia, Austria, the eastern parts of Germany, as also all the south-eastern countries, and is sometimes found in those provinces of Belgium and Holland near the German frontier. The smaller race occurs in England, Holland, Belgium, Germany, Switzerland, France, Spain, Italy and Greece. Both races may be sometimes seen together, namely, at the time of migrating, to which, however, not all individuals are subject. In France, England and Spain, the Bullfinch is almost a constant resident; nor does it seem to leave Europe when wintering, as none are known to have occurred in Africa.

The sexes may be distinguished by the following:—the male has the upper part of the head, part of throat, wings and tail glossy black; the back pure silvery grey; the rump, belly and under-tail coverts white; the throat, breast and sides light red. In the female the red is replaced by a brownish grey, and the silvery grey by a greyish brown. The young ones are like the female, but the black on the head is wanted: till the first moult they are of a brownish unicolour, like in the upper parts of the female.

The pairing season of our English Bullfinch begins in April. The nest is ready for incubation about the middle of May, and is usually placed in trees or bushes at no great distance from the ground, either on a forked branch or close to the trunk. Sometimes it is situated between the roots of larger trees, where it is as safe as amongst the branches, owing to its remarkable resemblance to a mossy root or tree trunk. The materials which are used consist of all kinds of soft fibres and roots, interwoven with horsehair, dead leaves, moss and wool, and lined with hair. The shape of the nest is a shallow cup, rather small, but neatly finished, and very strongly interwoven; it is much like that of the Chaffinch, though rounder and a little smaller. The eggs, generally four in number, are of a pale bluish green, covered with dark spots and reddish brown markings, forming streaks or lines.

The nestlings are fed, by both parents, on insects, chiefly spiders and soft caterpillars; but when about ten days old the insect-food is changed for seed, which is given out of the crop in the same manner as in Parrots and Pigeons. After leaving the nest the whole family may be seen together, flying for short distances, and rarely leaving the locality. Bullfinches are usually seen either in flocks or paired throughout the year; while in autumn and winter they congregate in larger troops, visiting more open localities, and feeding on the berries of the hawthorn and privet. Although Bullfinches eat insects they, nevertheless, take seeds for the larger part of the year, their hard, curved, sharp-edged beak enabling them to crack and peel various kinds of pips and grains. Like the Siskins they pluck alder seeds, and assimilate to the Crossbills in the manner of picking out the seeds of pine-cones. Bullfinches are harmless little creatures, and live on most amiable terms with each other. During winter when food becomes scarce they may be seen in gardens near human dwellings, without showing any fear. I have seen them settling on a hawthorn hedge, peacefully perching or eating the berries, while several labourers were working at some few yards distance.

Few birds are of such a pleasing nature, and, as a cage bird, none is to be found so suitable for our drawing-room as the Bullfinch. It soon knows its master, or the person who brings it food, and is very fond of being petted by him. The Bullfinch often shows a peculiar amiability to some particular person, and sometimes is very curious in his choice. Once attached to its master it rarely cares to receive the caresses of others; while at the approach of any stranger it becomes fierce, opens the beak, beats the wings, and bites the finger presented to it.

When left to roam freely in the room it will follow its master from one spot to the other, sit on his shoulder and pipe a tune, as if aware that this would be pleasing to his tutor.

Many remarkable instances of wonderful attachment have been cited; and nearly every description given of the Bullfinch contains some such record.

But besides its pleasing manner as a pet, there is its agreeable and musical piping. It is not every individual that possesses this talent in the same degree; some having a greater capability for learning than others. A Bullfinch will rarely pipe unless taught to do so at an early age; and great care, practice and patience is required to make our feathered pupil utter the first sounds of a tune. The lessons should be continually given throughout the day, and always the same tune be taught. The Thüringer bird-fanciers are certainly the best teachers; while the Bullfinches caught in that neighbourhood seem of a very teachable nature, and to possess a clear and powerful voice. They are generally instructed by the whistling of their teacher, rarely by hand-organs, which have proved to be far inferior for that purpose. A well instructed piping-bird, either a Bullfinch or some other species (Blackbird, Starling or Parrot), may also be employed for their tutor.

A Bullfinch often assumes the tunes of its comrades without having been previously taught by its master; and I know several instances of Bullfinches who, unexpectedly, began to pipe after having been silent for years.

I had a young male, brought up from the nest, which I taught for a long time without avail; the bird seemed stupid and obstinate, and never uttered a single tune beyond its ordinary song. At the beginning it would listen attentively to my whistling and appear to be pleased with it, but gradually its attention abated, and the bird was quite deaf to my instructions. The cage was hung outside the window, and the bird was left to its own will. After some six months I was much surprised to hear it pipe, in a very clear and distinct tone, the refrain of a Dutch popular song. In the vicinity there was a bell-ringing church-tower (Carillon) playing that air every hour;

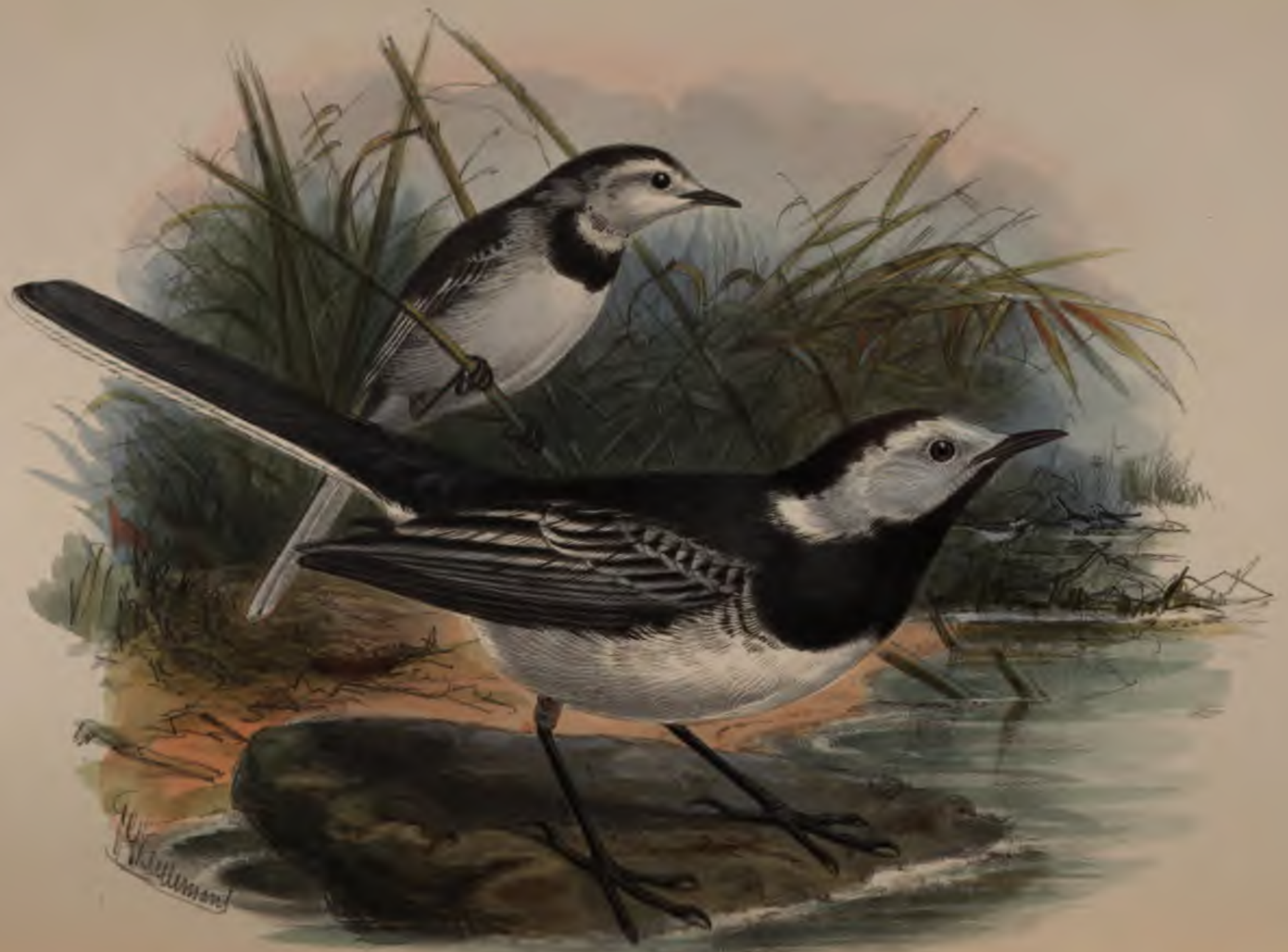
and from this the bird had been taught, without any further human interference. At last it mastered the entire air, and became a perfectly skilled piper. It should be observed that all the piping Bullfinches belong to the small race. This may be accounted for by the want of practical bird-fanciers in those countries where the larger race occurs. On the other hand, in Germany, where the smaller race is abundantly found breeding, nearly everybody is an amateur, if not an educator, of young birds.

Not much can be said in favour of the natural voice. The males of both races sing throughout the day, and nearly throughout the year, but their song does not possess such pleasing sounds. Nevertheless, their great talent for imitation and their charming flute-like tone prove sufficiently that their vocal organs are highly perfected, and only want development. The natural song of a Bullfinch is a mere quick succession of hoarse and chirping notes; a hoarse twittering in the *major key*. The larger race presents a slight variation in tunes; and a practical observer may easily distinguish both races by their song; that of the Russian, or larger, Bullfinch, being a rough and hoarse chirping; that of the smaller, a joyous twittering. A Bullfinch, in confinement, is a passionate, irritable, highly sensible little creature; it becomes soon excited; and many instances are known of Bullfinches dying from fits caused by too great excitement.

Its food should consist of canary-, flax- and hemp-seed; now and then a piece of walnut or hazel-nut; and, in winter, some pips of pears and apples should be given. It likes different kinds of fruits and berries; and will take raisins, the berries of hawthorn, holly and privet, and all kinds of greens, such as buds of leaves, weeds, cabbage, &c. Some will eat mealworms, though generally the Bullfinch rarely touches insects when in confinement.

There are many instances of their breeding in the captive state; and, last year (1870), a friend of mine possessed a pair of the larger race that built a nest and hatched four eggs; the young ones, however, died when some days old.

Mules, of Bullfinches and Canaries, Linnets and Goldfinches, sometimes occur; and frequently at bird-shows such wonderful phenomena are exhibited, showing in what degree nature can be made ridiculous through the interference of man.



J. G. KEULEMANS LITH.

M & N HANHART IMP.

THE PIED WAGTAIL

(Motacilla Yarrelli).

La Lavandière lugubre } (French).
La Hochequeue d'hiver }
Die schwarze Bachstelze (German).
De Rouwkwikstaart (Dutch).

WAGTAILS form a distinct and very characteristic genus of birds, and may be distinguished by their graceful and rapid movements, elegant flight, and especially by the peculiar formation of the wings. In their habits and change of colour, produced by season and age, they must be regarded as a particularly interesting family of birds, in many respects approaching the Pipits, while in others they resemble the Wheatears. They chiefly live in open plains near water, feed on insects, build their nest in holes, and are seen in flocks or pairs throughout the year. They have a song, but are not classed among the singing birds: they are not real perchers, although they settle on trees; nor are they ground birds or runners, though the structure of their legs and feet is adapted for flat and open ground.

Amongst Wagtails there is a peculiarity in the form of the nail of the hind toe: in one species this is straight, in others curved; and on this account they are often separated into two divisions. The Pied and the Grey Wagtails have a curved nail, while the Yellow species has it more or less straight. Some ornithologists have considered the former as arboreal, and the latter as being entirely confined to the ground: this, however, is altogether a fanciful classification, founded on the form of the nails, and not in the least degree based on personal observations of the living bird.

Pied Wagtails are also regarded as forming two species—the White Wagtail (*M. alba*), and the dark or common species. It has often been disputed whether these two birds are really distinct, or whether the one is not a variety of the other. Most continental ornithologists consider the Pied Wagtail as a variety of the White one, due to the influence of climate. It should be observed that the former species is almost entirely confined to England, and is rarely found on the Continent, except in winter; that the species or varieties of the Yellow Wagtail exhibit a gradual transition of colours; and that in nearly every country where these birds are residents peculiar-coloured examples occur.

The opinions of ornithologists differ greatly with respect to these varieties. Some assume that when the change of colour is occasioned through the influence of a certain climate or food, or other circumstance, such varieties of birds will nevertheless breed, and reproduce the original species. Others consider that if a bird is proper to certain localities, and reproduces young ones similarly coloured, such birds are constant species.

The Pied Wagtail is a resident in this country, and a rare visitor on the Continent. Owing to its darker plumage, many authors have described it as *M. lugubris,* from whence it derives the French name of *Lavandière lugubre,* while the Dutch give it the name of "Mourning Wagtail." In France and Holland it is only seen in cold winters; which agrees with Mr. Harting's remark ('Birds of Middlesex') that it is partially migratory: —"For although common in summer, and most numerous in autumn, when it may be observed in small parties of seven or eight, yet few are to be seen here throughout the winter, and I have no doubt that a great number of Pied Wagtails move southward as that season approaches."

In the accompanying Plate the bird is represented in the summer plumage, and the distant figure shows its winter dress. The female exhibits the same differences with respect to the season, but is not to be distinguished, either in size or in colour, from the male. As the change of colour takes place gradually, it often happens that one individual assumes the summer dress at an earlier period than another. Old birds are usually much darker than younger ones, in which the colours of both seasons are always commingled. Such individuals are generally considered as females; yet all Pied Wagtails of a previous year will show this imperfection. The young ones, before the moult, are very similar to the parents in their winter plumage, but the black on the head is wanted, the cheeks are a little yellowish, and the feathers of the back not so beautifully grey. The change from the summer to the winter plumage takes place within two or three weeks, and by moulting; while the transition from the winter to the summer dress is gradually assumed, not by moulting, but by a slow and regular coloration of the feathers themselves: every feather gradually changes into black, and, although some dead or winter feathers are dropped, no fresh ones proceed from the skin. I have carefully studied this change of colour in the White and Yellow Wagtails, and obtained many individuals, collected in March and April, of which the summer plumage was partly and irregularly mixed with the winter feathers. Nearly all birds presenting similar differences change their colours on the feathers themselves, and moult only once a year, namely, after the breeding time.

The pairing season of the Pied Wagtail is in April, and the nest is built about the end of that month, sometimes earlier, according to the weather. Wagtails do not seem to be very particular as to the localities to be selected for the rearing of their young ones, and so occasionally build their nests in very unexpected places, such as in a deserted mole-hole deep in the ground, in cavities of walls of dwellings, under the thatch of village houses, between the boards of country bridges, among heaps of stones, between cavities in the trunks of trees or at the top of pollard willows. Generally the nest is carelessly interwoven, and flattened or rounded according to the spot on which it is situated: it is composed of all kinds of soft materials within reach of the birds, such as moss, dead grass, leaves, roots, and sometimes feathers; it is always lined with sheep's-wool or horse-hair, which is picked up by the birds from the gates in meadows or yards.

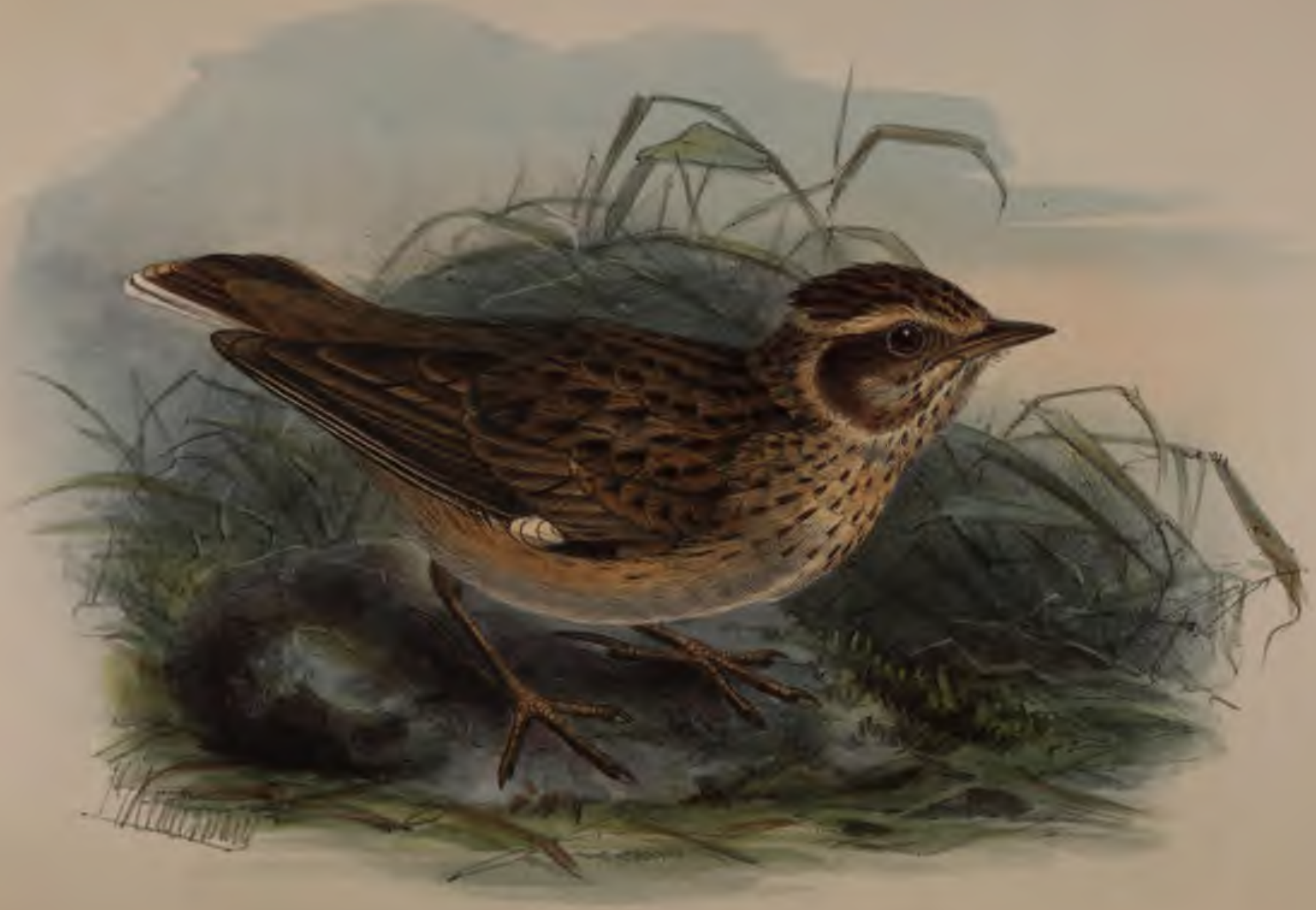
The eggs are from four to six in number, of a light greenish grey, closely speckled with light and dark brownish spots running into each other: they much resemble those of the common Sparrow, but are smaller, more pointed, and the spots less elongated. Both parents take part in hatching, and the males are much attached to and show great affection for the females. During the breeding season the Pied Wagtail never leaves its mates, one always following the other, as well on the wing as when on the ground. The male often runs and hops round about the female, bowing his head, spreading his tail, shaking his wings, and continually following his mate, uttering a loud chirping and chattering noise.

When the eggs are hatched, both parents are fully occupied in bringing food, chiefly gnats, which they catch on the wing and on the ground. During that time these elegant little creatures may be seen running with rapid steps on the footpath, now and again crossing, with amazing swiftness, from one spot to another, occasionally flying up and beating the wings, like a Flycatcher. At such times they are in search of gnats, which they keep in the beak till a sufficient number is obtained, after which both parents hasten to the waiting progeny: as soon as they are fed the same pursuit is continued, and so on throughout the day, for about a fortnight, when the whole of the little family leave their nest and go off with the old birds.

Young Wagtails grow very rapidly, and are soon able to fly. After having hovered about at some little distance, they are brought to the water, and bathe together with their parents, shaking the body, wetting their feathers, and altogether enjoying themselves, in such a manner as, on warm summer days, to create in observers quite a feeling of envy. I have often seen them walking on the weeds of ditches, sometimes three together on the same spot, picking up small snails and running after dragonflies. Although the weeds grow thickly on some waters, still the above fact exhibits the remarkable lightness of these birds.

A Wagtail family will frequently remain in the same locality till winter approaches, and then go away together. Those which remain, and pass the winter on our shores, often have to encounter hard and troublesome days. Snow has covered the meadows and roads, the water is frozen, and no food is to be found: though they may require but little, still they are in need, and the little things may be seen cold and half-starved, their walk slow, their look imploring.

Wagtails may be kept in confinement, and, although of a rather weak constitution, will soon become accustomed to captivity. When brought up from the nest, or caught early in spring, they will do better than if procured in autumn; but in all cases much attention should be paid to their food, which must be nourishing, such as hard-boiled egg and raw beef mixed with ants' eggs; a mealworm should be given occasionally, and a mixture of crumbs of bread and scraped carrot should always be within their reach; while a large cage, with turf or gravel at the bottom, and plenty of water to bathe in, will contribute to their health.



J G Keulemans lith.

M & N Hanhart imp.

ALAUDA ARBOREA

THE WOOD LARK

(Alauda arborea).

THE Wood Lark is found throughout the whole of the south and central parts of Europe, but does not extend so far North as its congener the Sky Lark, and is nowhere so plentifully distributed as the latter. It occurs also in Central Asia. Many individuals migrate in autumn, and are then seen together with the Sky Lark, although in the southern countries of Europe, as well as in England, it is seen all the year. Its favourite haunts are restricted to dry and sandy plains, near woods, or in heath. Sometimes it is found in the immediate vicinity of trees, and occasionally seated on a branch; whence it derives the name of Wood Lark. Nevertheless it does not frequent forests, and is rarely seen in thickly-wooded localities.

This species is frequently confounded with the common Sky Lark, in consequence of its similarity in colour, although a close comparison of the two species will show that they differ in many respects. The entire length of the Wood Lark is from 6 inches 5 lines to 6 inches 1 line, while the Sky Lark measures from 7 inches 5 lines to 6 inches 3 lines. This shows that the Sky Lark is nearly always larger, and that it often varies considerably in size, which is not the case with the Wood Lark. Besides, the tail of the Wood Lark is much shorter, slightly broader, and differently coloured. The following comparisons will show the differences that exist between these two birds :—

WOOD LARK.	SKY LARK.
Beak more slender and brownish horn-colour.	Beak rather stout, and dark horn-colour.
Legs yellowish; the nail of the hind toe straight, and nearly equal in length with the hind toe.	Legs stronger, a little darker, and the nail of the hind toe very thin, and as long as or longer than the hind toe.
A distinct whitish line over the eye, extending to the occiput.	An imperfect whitish line only above the eye.

Wood Lark.	Sky Lark.
Ear-coverts brown, with a whitish triangular spot on the cheeks.	Ear-coverts spotted with dark brown on a whitish ground.
Spots on the breast distinct, blackish, and on a sandy white ground.	Spots on the breast more irregular and not so distinct, greyish brown, and on a dirty white ground.
Back brownish, spotted with black.	Back greyish brown, spotted with blackish grey.
Rump brownish, nearly unspotted.	Rump greyish, distinctly spotted with brownish black.
Upper tail-coverts brownish, slightly spotted.	Upper tail-coverts greyish, and distinctly spotted with black.
Tail 2 inches 3 lines, feathers a little pointed, and the tail of a square shape.	Tail 2 inches 7 lines; feathers pointed, lanceolate, and giving the tail a forked appearance.
Outer web of the first quill-feather white; the second whitish or sandy; the third brownish black, with a large white tip; the fourth the same colour, with a smaller tip; the fifth the same colour, without any white, and the middle brown.	Outer web of the first two quill-feathers white; the remainder dark greyish brown.
Wing-feathers — primaries with a white margin; secondaries black, with brownish edges; wing-coverts rufous, with a dark stripe over the shaft, the first series unspotted.	Wing-feathers — primaries with whitish margin; secondaries more grey; wing-coverts greyish brown, a large dark spot on each feather.
Coverts of the primaries black, with large white tips.	Coverts of the primaries greyish brown.
Crest-feathers dark brownish, long, and more rounded.	Crest-feathers more greyish brown; crest not so long, and the feathers more pointed.

This will sufficiently show in what particulars the two species are to be distinguished.

In the movement also there is a difference, the Wood Lark being quicker, taking shorter steps, and generally keeping the body more horizontal.

The difference in their singing is most remarkable, the Sky Lark having a joyous, warbling, and long-continued song, with high and sometimes chirping tones; while the Wood Lark has a bright, pure and impressive modulation, with short and more regularly repeated notes, at times resembling those of the Thrush, at other times those of the Nightingale. It sings as well by night, and is often heard in the dark.

The Wood Lark does not build its nest, like its congener, among grass in the meadows, but in the heath under some roots or branches, under trees between the larger roots, under a bush or low plants, and always on dry ground.

The nest is composed chiefly of dried grass, mixed with moss or dead leaves, if they are to be found in the vicinity: there is no other lining than the soft part of the grass, which is turned inside. Usually the nest is higher, better finished, and more compact than that of the Sky Lark.

The eggs are from four to six in number, of a dirty white with brownish spots; at the larger end some darker speckles are to be seen, but rarely forming a zone; in those of the Sky Lark such a circle is always more or less visible.

The male does not seem to take any share in hatching the eggs, but carefully attends the female, bringing her food and watching the nest while she is sitting. The young ones are fed by both parents, which often go together in search of food, leaving their young ones alone for awhile.

There are two broods, the first in May, the second at the end of June, after which young birds and old are seen together in flocks, visiting the ploughed fields and remaining there for whole weeks.

They feed on small worms, caterpillars and soft seeds, while in winter harder seeds and grain form their principal food.

The sexes do not differ in colour, and only a little in size, the female being a trifle smaller; but the difference is so minute that from the mere exterior the sex cannot be determined. The young ones have light edges on the wing- and tail-feathers, dark broad spots on the back, and are more speckled and less striped on the breast and throat.

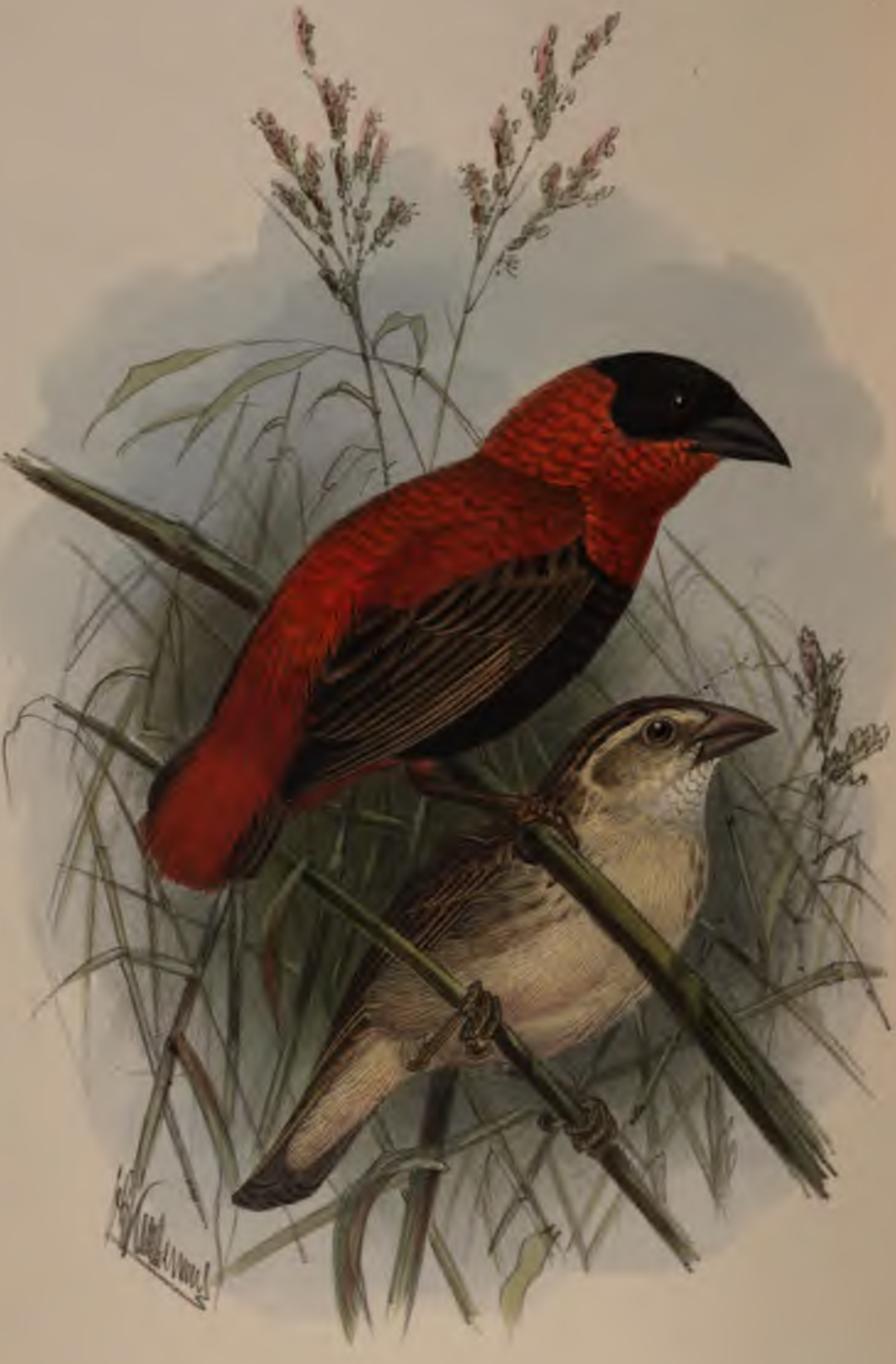
Wood Larks are difficult to rear, and only few will sing in confinement: the reason of this is to be attributed to the food which is given them; generally they are treated in the same manner as the Sky Lark, and supplied with a similar kind of food, in which case they will very seldom utter a note.

Out of a dozen Wood Larks caught, only five or six will survive captivity, while the remainder will rarely produce any satisfactory song, unless great care and attention be bestowed upon them. It should have a spacious cage, with a protecting wall on one side, and the remaining sides wired; or, if not so protected, the cage should be always placed in such a position that it will be sheltered from wind, draught, the sight of man, or any other object which may frighten the bird.

All Larks are of a shy and retiring disposition: they are frightened at a very trifling thing; and although they will become accustomed to the circumstances in which they are placed, still they show great fear at the presence of unaccustomed objects. They should be supplied with a grass-turf and plenty of dry gravel, and the cage should be hung in a quiet place.

The following food should be given: — Crumbs of bread, crushed hemp-seed, scraped carrot, and some ants' eggs, mixed together; it should also occasionally be supplied with some dried and scraped heart, mixed either with the above-named food or with hard-boiled egg, and then given separately; and one or two meal-worms a day will promote its inclination to sing. Although the intelligence of the Wood Lark is by no means equal to its vocal endowments, it will imitate or take up in its song the tones or notes of other birds, such as the Chiffchaff, Goldfinch, and Thrush.

I once had young ones brought up from the nest, of which three were males and two females; at first they were all very tame, but after having moulted they became shy and restless. One, however, showed great vocal abilities, and became a charming songster: it had been kept in a room where a Nightingale was singing, and had partly assumed the song of that bird, and so gradually perfected its modulation. In October, the Nightingale having left off singing, I had the pleasure of hearing it imitated by the Wood Lark, which executed the thrillings and chatterings with such wonderful accuracy that many persons visiting my house expressed their surprise at my having a singing Nightingale in winter.



J G KEULEMANS LITH.

M & N HANHART IMP.

EUPLECTES IGNICOLOR

THE FIRE-COLOURED WEAVER-BIRD

(*Euplectes ignicolor*).

Tisserin ignicolore (French). *Amarello pequeno* (Portuguese in Benguela).

WEAVER-BIRDS form a remarkable genus of the *Fringillidæ*, and are considered to be the most skilful and able among birds in nest-building. The species of this genus exhibit a general similarity in the form and shape of the legs and beak, although certain modifications are to be observed in their structure, as well as in their habits and peculiarities. There is no external distinction to indicate more or less ability in weaving, for there are both short- and slender-beaked, large and small species, exhibiting equal capacity; while closely-allied forms of birds often build very differently shaped nests. As their classification is in a measure based on their capacity for, and skill in, weaving, great difficulties occur in their scientific determination; the more so as in general the species are merely known from the skin, while the habits of the birds are but imperfectly known; therefore the name of Weaver-bird is commonly bestowed upon those species of *Fringillidæ* which, besides their habits of weaving highly artistic nests, present a mutual similarity in external appearance. Some ornithologists adopt other characters peculiar to this genus, namely, that they live sociably, and have ten instead of nine primaries on the wing. According to such opinions the number of species would be either very limited or very widely extended, while many which exhibit wonderful skill in weaving would either stand alone or be annexed to a group with which they have but little connexion.

The real Weavers (*Plocei*) have a strong conical beak, very broad at the base of the upper mandible, and the latter forming a straight line with the forehead: they have (like many other genera of *Fringillidæ*) ten primaries, strong legs and curved nails, live in colonies, though occasionally one or more pairs may be seen living separate from the community. They are chiefly found in grass-fields, low trees or bushes, in which they build a large and hanging nest. The nests of Weaver-birds are always composed of grass or vegetable fibres, with the opening sideways or underneath. Their vocal abilities are small, the song, if any, consisting in a modification or varied and quick succession of the common call.

As in most other genera of birds, different modifications in shape, or similarities in the distribution of colours, may be observed among the species of this genus; and if such modifications are peculiar to more than one species, they are then generally divided into sub-genera or groups.

Such a sub-genus is constituted by the Fire-coloured Weavers, the colour of which is a very brilliant orange, or red and black, and the feathers are soft and velvety. They are peculiar to Africa, and some of the species—the one now described, for instance—are observed in the western and eastern parts. They are found in grass-fields, on low trees and bushes, where they live in flocks or pairs, and where they build a rather large and very artistic nest among high grass or on the lower branches of trees.

The beautiful plumage is confined to the males during the breeding-season; after that time both sexes present a similar plumage. The males assume the breeding dress gradually, and by coloration of the feathers themselves; after the breeding-time this beautiful plumage is thrown off, and the winter plumage appears by moult. It is a remarkable fact that only the feathers of the body, and not those of the tail and wings, change colour. In the accompanying Plate the male is represented in full summer dress; the lower figure shows the colour of the female at the same period. The male, after moulting, is not to be distinguished from its mate by the colour of its plumage, although in many cases it may be recognised by the darker shade of the beak. After having moulted, the beak still remains black for some weeks, and gradually changes, as in our Chaffinch; therefore it may be often darker than that of the female, although the plumage has changed weeks before.

I have never seen any example, either alive or in skin, of the young birds of this species; nor can I find one of them described by any author. Most probably they are like the female, but more distinctly striped on the sides and breast, which is the case in the two allied species, *E. oryx* and *E. flammiceps*.

The nest is composed of dry grass or split palm-leaves, and is woven very loosely together: it is fastened to the stems of high herbs, hanging among the foliage, and not freely suspended like those of many other Weaver-birds. Sometimes it is round, at other times elongated, but always with the opening more or less lateral. The eggs are blue and unspotted, and much resemble those of the Redstart.

The food of this species consists principally of grass-seeds, although they will eat common rice: living in flocks, they often cause much mischief to the harvests.

As a cage bird this species has but little to recommend it except its colours. It will occasionally weave threads round the wire of its cage. Its song, though not unpleasant, is a mere rattling noise, much like that of our Sparrow. Its beautiful and splendid colours, however, compensate for these requisites; and a pair of these birds in full colour always attract much admiration: they are of a very lively disposition, especially in the summer time, when the male seems to put forth its utmost allurements, in order to charm its mate, by hanging on the wires with the head turned sideways, and beating the wings slowly and regularly like a butterfly.

In some cases—for instance, when they are living in a large aviary where there is foliage—they will build a nest and breed, but this is of rare occurrence. On the Continent, chiefly at Lisbon, they are rather common cage birds, being brought from their native countries to that city in great numbers. They are very economical as regards their food, being satisfied with millet or canary-seed. In captivity they do not always assume their summer plumage perfectly, and some individuals become entirely black, or irregularly spotted with that colour.

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A
NATURAL HISTORY
OF
CAGE BIRDS.

BY

J. G. KEULEMANS,

LATE ASSISTANT TO THE MUSEUM OF NATURAL HISTORY OF LEYDEN.

WITH

SIX COLOURED PLATES DRAWN AND LITHOGRAPHED BY THE AUTHOR.

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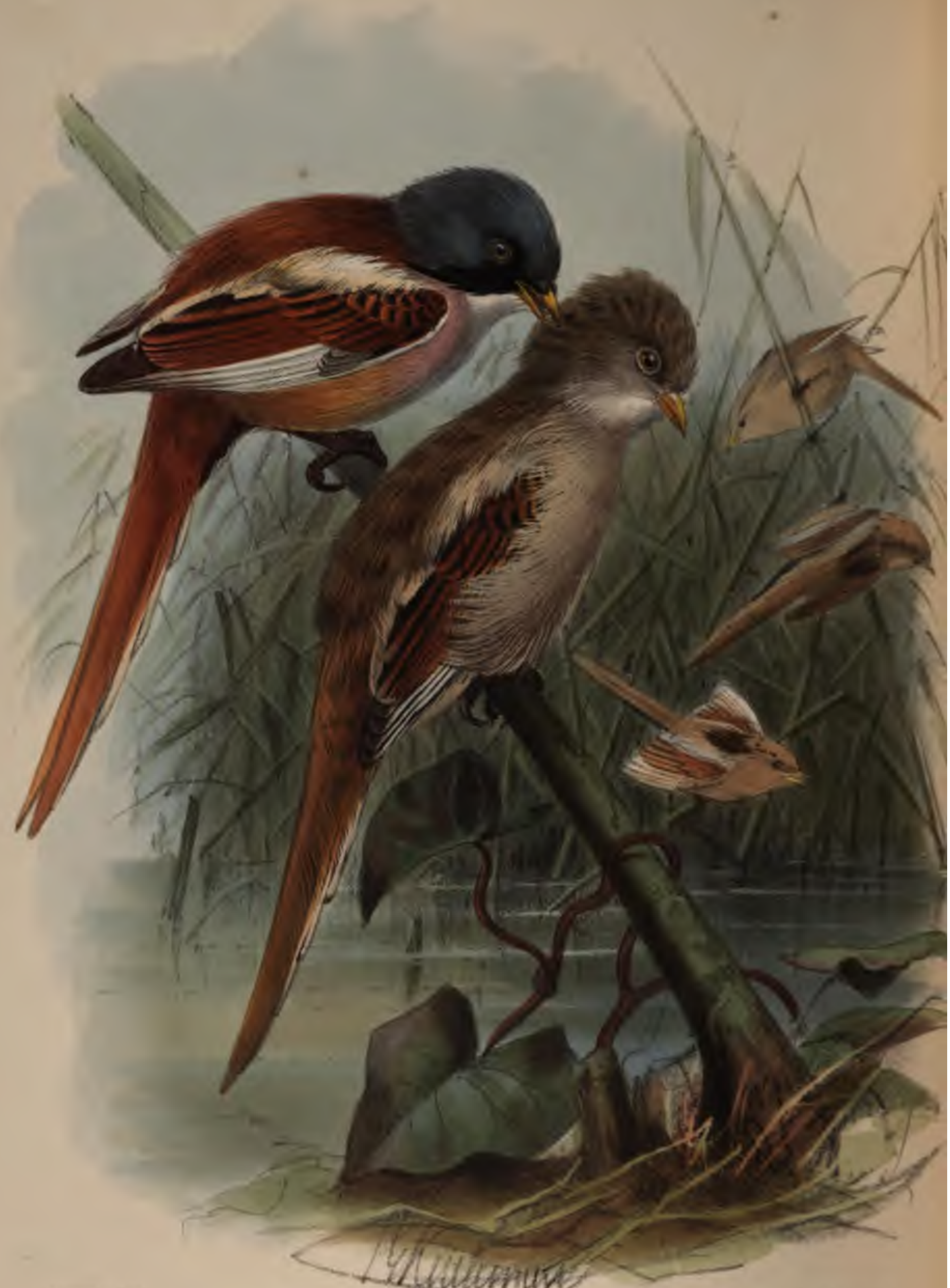


J. G. KEULEMANS LITH. M & N HANHART IMP.

CALAMOPHILUS BIARMICUS.

THE BEARDED TIT

(Calamophilus biarmicus).

La Mésange à moustaches (French).	*De Baardmees* *Het Baardmannetje* (Dutch).
Die Bartmeise (German).	

THE Bearded Tit is confined to Europe, and may be considered as peculiar to that continent. It is not a common bird, although it occurs in nearly every European country; its range extending over Denmark, Russia, Gallicia, Hungary, Italy, Spain, France, Belgium, Holland and England. In Scandinavia, Turkey and Greece it does not seem to occur.

Bearded Tits are usually seen in watery and marshy localities, flying in flocks or pairs, but never alone. They dwell in the reeds or in low trees near the waterside, often approaching near to or alighting on the ground amongst herbs and high shrubs, rarely settling on large branches or in high and thick-foliaged trees, and are never seen in company with birds not of their own species. Bearded Tits avoid the society of other little songsters wherever they can; they are extremely retiring, and seem purposely to separate themselves from the other feathered inhabitants of the neighbourhood. In this respect they behave just like strangers, forming an union amongst themselves, and avoiding contact with all other birds.

The Bearded Tit is a very characteristic, highly peculiar, and most interesting little bird. With respect to its structure and habits, it stands alone in the European avi-fauna; in fact it has no relatives anywhere, and is a bird of so peculiar a formation as to constitute a genus by itself. Despite this, it may be classified, so far as regards the avi-fauna of Europe, near the Tits (*Parus*), with which, however, it has but little connexion. From its restless flight and constant movements it may be in a measure analogous to the Longtailed Tit (*Acredula*), but a more careful examination of the movements, and comparison of their anatomical structure, will sufficiently show that they are not very closely connected. Besides these differences, the wing of the Bearded Tit is more vaulted and rounded, and the tail-feathers are of more conical form; the beak also is more curved and less sharply pointed. Bearded Tits never strike at or break the seeds, like the true Tits do. Insects they swallow at once, or, if not killed, they pass and turn them round and soften them with the beak. True Tits, on the other hand, invariably place their food under the feet, and eat it in small quantities at a time. With respect to taking food, the true Tit resembles the Jay or Magpie, the Bearded Tit the Reed Warblers (*Calamodyta*). As to the structure of the legs, these present great similarity with those of the Redbacked Shrike (*Lanius collurio*), as far as regards the thigh-bone, foot-bone, and tarsus; the number and arrangement of the scales on the tarsus and toes are exactly the same, yet in the Bearded Tits the hind toe is longer and the nail more curved (somewhat approaching the *Calamodytæ*). In the accompanying woodcut the leg A is that of the large Tit, B Bearded Tit, C Butcher-bird, which will show how far the leg of the Bearded Tit resembles the latter and varies from the former. With respect to the movements performed by the legs, the Bearded Tit differs from the Tits proper, and approaches nearer the *Calamodytæ*. All Tits climb up branches and creep upon the trunks of trees; in climbing they progress with short and pushing jumps, while the Bearded Tit walks, without interruption, from the root to the top of a reed-stem in the most adroit and regular manner, and never creeps upon the larger branches or stems. Tits proper rarely settle on the ground, while the Bearded Tit is either on or near the soil, whether along the shores amongst the herbs, or in the plants in marshes or swamps. In the movements of the wing they have something quite peculiar, combining the flight of the Longtailed Tits (*Acredula*) and of the *Drymæca* (a genus of tropical, slender-formed, quick-moving, but very delicate little birds, noticeable by the rattling noise which they produce during their flight, and more or less allied to the *Calamodytæ*). Bearded Tits are very restless, always balancing, hanging, climbing, hovering, or flying from one spot to another; in this they resemble the Bottle Tit, but with the exception that all their movements are more regular, more elegant and more measured, while the Bottle Tits are in a continual hurry, dashing forwards as though chased; but the remarkable manner in which they use the wings is seen when they fly in a flock from one spot to another; a whole family will come out of the reeds, fly upwards with quick and very playful movements, the body held straight, the head thrust forward, the tail having a kind of up-and-down motion, and so proceed, one after another, from one reed-ground to another. Such a flock of Bearded Tits often reminded me of the white butterflies playing in the air or round about the flowers on a sunny day in summer. Of course such progress is very slow, and it often happens that the little family remain hovering and tumbling for some minutes, and then return to the spot they had just left. When in the marshes, they rarely fly to any great distance at once, merely going from one reed-stem to another, climbing up to the top, and so progressing very regularly, visiting the neighbourhood till about the middle of the day, when they settle down in the interior of a reed-bush. When on the wing, a continuous "*tjunk, tjunk*" (their common call-note) is heard, but when resting in the reeds no sound proceeds from them: they sit down close to each other, forming a row, with their heads turned all one way, the young ones generally in the middle and the old ones at each end. It often happens that while the little family is enjoying itself in fancied security an unforeseen danger is near, for many are the foes in such localities—polecats and even house cats, weazels, jays, magpies, crows, merlins, hobbies, kestrels, and especially that fearful assassin the sparrowhawk, which often destroys numbers of little birds dwelling in the marshes; but no sooner is a dangerous or conspicuous object observed than the entire flock of Bearded Tits at once seek the thick foliage, remaining motionless, and so close to each other as to present the appearance of a lump of brownish feathers. If a bird of prey should suddenly and without warning pounce down amongst them, they dart forwards in a straight line close to the ground, each seeking its own safety, and at once disappear. If a single individual is chased it acts in the same manner, and I have often seen one on the ground, hiding amongst the grasses on the margin of the shore. Once I had three pairs in a cage, one of the wires of which had accidentally been broken, leaving an opening through which the birds made their escape. They amused themselves in flying round the room, and were so active in their movements that I could not catch a single one. No sooner did I approach than they kept close to the ground, and dashed forward in a straight line to the corners, just like chased mice. At last I caught one, and placed it in a trap-cage, by means of which the others were soon captured.

Bearded Tits are migratory birds on the Continent of Europe, but seem to be residents in England. They are often shot near London, and I am inclined to believe that the bird is not so rare as is generally supposed. By its great adroitness and ability for concealment, and especially in the nearly inaccessible localities which it frequents, it might easily escape from the traps of birdcatchers. It has no real song, and thus is not so likely to be observed as the other feathered inhabitants of the marshes. I have several times seen the nests with old and young ones at the London birdstuffers, which shows that they are not so rare in this country. The following note I find in Mr. Harting's 'Birds of Middlesex:' — "In the year 1743 the Countess of Albemarle brought with her from Copenhagen a large cage full of these birds, when she returned from her attendance on one of the Princesses of Great Britain who was espoused by the Prince of Denmark; and some of these having made their escape, the Count de Buffon supposes that, from this circumstance, a colony was formed in England. Edwards (who calls this species the Least Butcher-bird, but refers to Albin's description of it under the name of Bearded Titmouse), writing in 1743, observes that he was favoured with a sight of the birds brought over by the Countess, and adds, 'I have seen some others of the same kind, both cocks and hens, shot among the reeds in marshes near London, though they are not well enough known in England to have a name.'"

They are rather numerous in Holland and some parts of Hungary, where lakes and water are more abundant than in any other country of Europe. They were even very common, some thirty years since, near Rotterdam, in the vicinity of which are several large lakes. As, however, some of these localities frequented by the Bearded Tit have been drained, and the marshes and swamps reclaimed, nearly all the birds that were in the habit of visiting the district have disappeared, and the Bearded Tits are gone to the province of Friesland. Previously many troops were to be seen daily near the so-called Cormorant Island, while now only a flock is met with here and there, the birds being still present, but not in such numbers as formerly.

From my childhood until now I always had some pairs of these charming little creatures in confinement, and I have caught many of them myself, and never enjoyed greater amusement than when watching them in their free and undisturbed life among the reeds and near the shores. Poets have chosen the dove as an image of love; they had done better to observe the Bearded Tits, and see how affectionate these birds are to each other, how happily they live together, how compassionate they are for each other's griefs; their mournings and sufferings to death, if one of a pair is lost or killed; then the poets surely would have chosen this intelligent little creature, instead of the ever-dozing or ever-frightened doves.

Bearded Tits being of a gregarious nature cannot, like many other birds, live alone: deprived of companionship they mope and will speedily die. If one of the family is absent, great anxiety will prevail among the others; if one is wounded or ill, its companions will assist and bring it food; if one dies, the others will fly round about it, pull its feathers as though trying to bring it to life again. When they sleep they sit so close to each other as to form a single mass of feathers, covering each other with the wing, sometimes with both wings: the old ones do this regularly, and usually the male is the protector, the female the protected. A Bearded Tit rarely arranges its own plumage; if a feather is turned the wrong way in the male, the female puts it right, and so on reciprocally. Frequently one comes behind the other, inspecting the state of its plumage; the least disarrangement is put right, the feathers are lifted up and the skin examined; the same with the legs. The female is very assiduously attended by her mate, and at every touch and turn of the feathers she moves the head, or other part under inspection, up or down as circumstances may require; and during the operation sits as quietly as a young lady when having her hair dressed; indeed a better comparison could not be made; the male being extremely flattering and attentive, taking no end of trouble, bowing and making all sorts of compliments, exactly like a French *coiffeur*.

A pair of Bearded Tits remain together for life. No matter whether spring or winter, they have a perpetual charm for each other, which perhaps is the reason they are so slow in building their nest. They begin to build about the end of April, and the eggs are laid as late as the latter part of May or beginning of June. The nest is a tolerably well finished structure, sometimes freely suspended to broken reed-stems or high water-plants; other times between the stems, like the nests of most Reed Warblers. It is often situated close to the ground among the grass. Its shape also varies; I have seen it rounded, with a very narrow opening, or more oval with a wide opening. I once found a nest suspended between the branches of a dead alder-tree lying in the water, so that only some of the twigs were above the surface. The nest was fastened on two branches and supported by several of the thin and thread-like stems of the common white Convolvulus, which in such localities is very abundant. The shape of the nest was rounded, very flexible, and the opening rather narrow; it was composed of dry grass, leaves of reeds, thin roots, a few dead leaves, and a little green moss, and lined with willow-blossom and horsehair: it contained four eggs, of a pinkish white; in one, however, some thin black streaks were to be seen at the larger end. I have heard the eggs described as being of pure white with grey streaks, and also of light pink, but such I have never seen. There were other pairs breeding in the vicinity, for I heard their note at some distance; but as the locality was not easily accessible I did not succeed in finding them. The spot was a marsh overgrown with reeds, rushes, water-plants, and bushes of pollard-willows and alder-trees. The water was thickly covered with weeds, so much so that Wagtails were walking over it.

Bearded Tits breed only once a year. Some naturalists believe that the male takes part in hatching, but very experienced birdcatchers ascertain that only the female sits. I do not know whether the family remain in flocks till next spring, as in winter the Bearded Tits are rarely seen in Holland. Some years since they were observed in February, in the province of Zeeland, near the town of Middelburg. The next winter (1870) I read in one of the Dutch newspapers that a flock of Bearded Tits had been caught near the same place, and it was stated as a remarkable fact that the old birds were accompanied by their young ones, the latter having apparently just left their nest. Being much surprised at this information, I enquired further into this curious occurrence, and found that the family of young and old Bearded Tits turned out to be nothing more than a flock of the common Bottle Tit (*Acredula caudata*).

Bearded Tits are more or less granivorous, and, during the autumn, chiefly feed on small seeds. Their principal food, however, consists of caterpillars found in the reeds, and especially the larvæ and chrysalids of *Leucania phragmitides*; they also pick up, from the weed, a great many small snails (*Succinea amphibia*), which they consume together with the shells. Ants' eggs and gentles are much liked by them. In autumn they find numbers of small insects among the so-called plumes of the reed (*Phragmitides communis*), which induced many observers to believe that they feed on the seeds. The seeds they feed on are those of chickweed, grass, wild sorrel, poppies (moss-seed), and other plants growing amongst the grass near the shore.

They have no real song, only producing very simple sounds, and though their vocal powers are but slightly developed with respect to singing, yet they are capable of giving full expression to their varied sentiments. A family of these birds, whilst in the undisturbed enjoyment of one another's company, continually utter their soft "*tchug, chur, chur-kee, gee, churchur;*" this they do throughout the day, and it seems to me that (like in the common hen and her chickens) this note is uttered in order to persuade each other that they all are present, and that everything is going on well; for no sooner is one out of sight than the common, sharp-sounding call-note is heard from all of them: "*tjunk, kjunk, tjink, tjink,*" sounds from all sides till the company is together again. When the young ones have come out, both parents announce their arrival by a sharp whirring noise, varied with a kind of loud snoring sound. If one is wounded or ill, the others have a peculiar note, to make it aware of their compassion, and then they utter a soft "*dzirr-dzirr,*" varied with a continued monotonous "*chee-urrr, chee-are.*" Also by their different attitudes their sentiments are to be recognized; the males, when alarmed or mourning, erect the feathers of the neck, keeping the body slender and the legs straight and stiff. When playfully climbing, they have the body very slender, but no sooner are they at rest than the feathers are puffed, giving them the appearance of a ball. Sometimes the family become extremely merry, and then they are seen jumping quickly on the ground, the body horizontal and the head in a straight line with the back, the tail raised and the wings lowered: in this position they dart forward from one side to the other, nearly touching the ground, and so continue till they are tired, or some approaching suspicious object disturbs them.

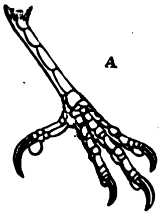
At the present moment I have two pairs before me. Of another pair the female died in a fit while it was busy arranging a nest (for they really were building one); the male was very fretful and restless, continually uttering its plaintive note, looking all round the room, calling her now and then, and exhibiting signs of grief. Although I placed it with the other two pairs, it did not find any comfort; on the contrary, it was very badly received by the other males, and died five days after its much-beloved companion. Some days ago I received another pair, but the male unfortunately died during the transmission. I placed the odd female in the cage with the others, and I believe it will, under the influence of society, forget its mate. However, the other males and females do not pay much attention to it, and the males remain faithful to their own partners. I have often kept a pair for four years at a time, and the pair which just died lived for two years in confinement. I have also brought up the young ones, feeding them with bread moistened with milk, and meal-worms cut into small pieces; afterwards ants' eggs and gentles were given to them. I feed the old ones on crumbs of bread, a little scraped beef, ants' eggs, and German paste, mixed together. Now and then I change the food, giving them hard-boiled egg and scraped carrot in place of beef, and moss-seed instead of German paste; they generally have two meal-worms a day (first taking off their heads), but when these are scarce I give them gentles. They are very fond of caterpillars, but will not take flies, ants or spiders.

In the Plate the adult male and female are delineated from the living birds in my collection. The distant figures represent the young ones.

The young individuals, before the first moult, vary much in colour from their parents. After the first change of plumage the indications of dark stripes on the head become very distinct on the female, and the black spot on the back changes into stripes; in the male this disappears totally. The first three tail-feathers, in both sexes, are nearly all black before the moult; after that time the black is present on the inner web only.

Bearded Tits are generally caught in small nets, about four feet long by two feet high. The net is placed near the reeds, on the shore, and is pulled down with a cord about ten yards in length. The birdcatchers, who usually follow this kind of sport in the open fields or meadows, conceal themselves behind a heap of branches, as these birds are rather shy. Decoy-birds are necessary; these are placed on the ground, under the net. It is somewhat difficult to discover a flock, as they hide very soon, and remain quiet for hours; despite this, experienced birdcatchers find them out by the movement of the reed-stems; the whole flock is generally caught together.

After the breeding-time, namely, September and October, they are sold at the markets in Rotterdam and Amsterdam at from two to four shillings a pair.



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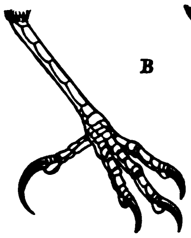

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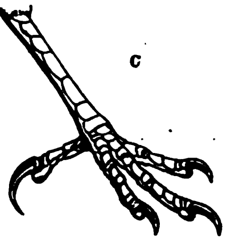

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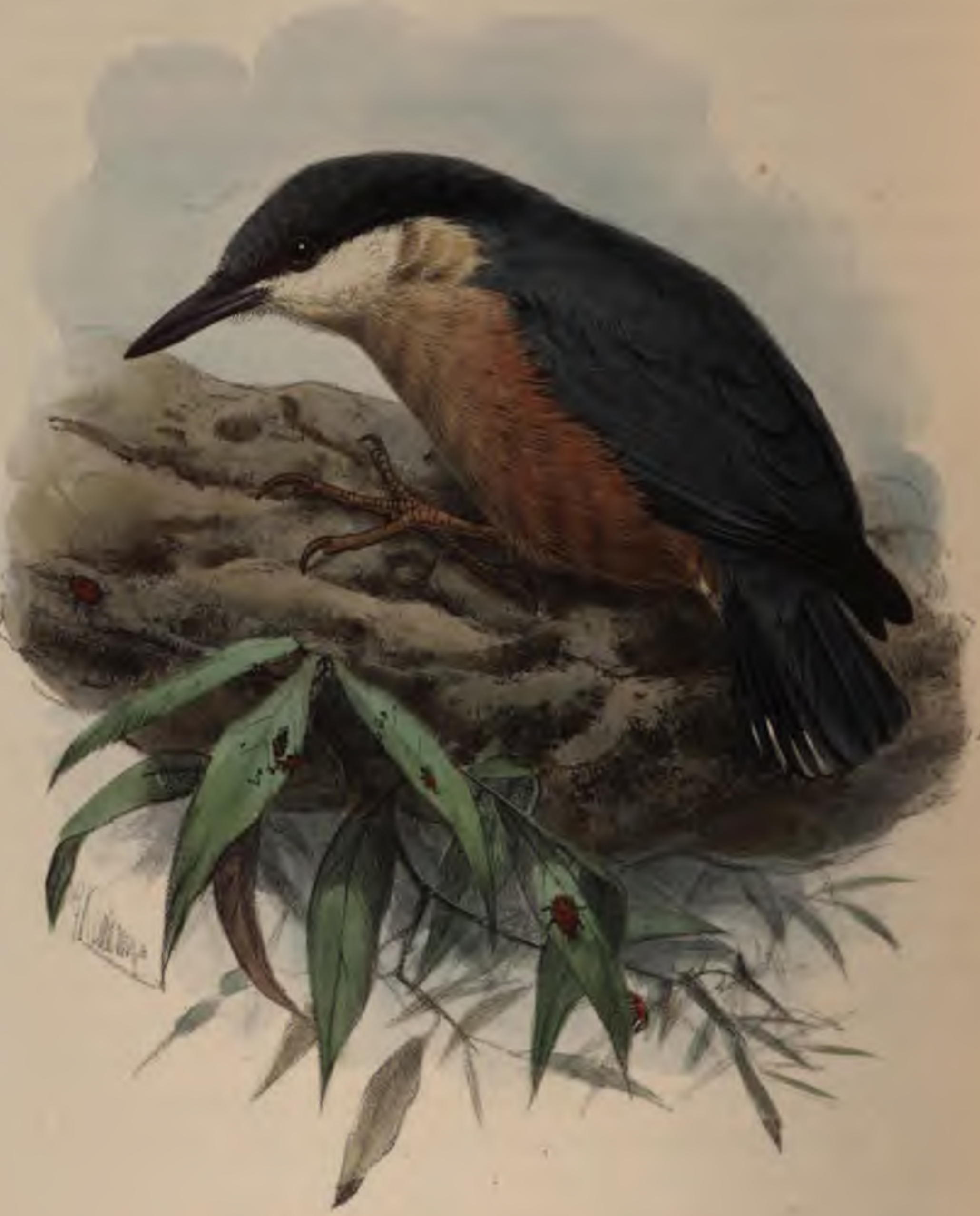

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SITTA CÆSIA

THE NUTHATCH

(Sitta cæsia).

Le Torchepot (French).	*Der Kleiber* } German.
De Boomklever (Dutch).	*Die Spechtmeise* } German.

A. E. Brehm, the Nestor of German Ornithologists, says that the Nuthatch is a bird intermediate between the Woodpecker and the Tit. Those who have observed this curious bird will agree with the comparison, inasmuch as the Nuthatch, in its construction, and especially in its habits, approaches the one as much as the other. Nevertheless, it forms a very distinct genus, having representatives in Europe, Asia, Australia, and North America.

The common species is confined to temperate Europe, a larger and paler variety (*S. europæa*) occurring in the eastern parts; while another species, recently discovered, is found on the islands of the Greek Archipelago.

There is no perceptible difference between the sexes, and the young ones are much like their parents, but want the rufous tint on the under parts; they are of a lighter grey, and very handsome little things.

Nuthatches are expert at climbing, walking up and down the trunks of trees like the Woodpeckers, and often descend a tree head first. They are not such perfect gymnasts as the Tits, but still jump and hang with great agility, and surpass the Woodpeckers in adroitness. Nuthatches are of a strong and very muscular build: they fly well, jump very quickly, they hang in all attitudes, climb in all directions, hammer holes in decayed and even in fresh wood, break nuts, devour the larvæ of a great many destructive beetles, and are very useful, gay and active little birds.

The Nuthatch prefers woody countries and overgrown forests to plains or watery localities. It is a resident wherever it breeds, and is of very sociable disposition. Among birds it performs the functions of mason and carpenter at the same time. A hole in an old tree is generally chosen for the home of its little progeny. If the hole seems too narrow, both male and female hammer and knock until the hole is sufficiently large to build the nest in. If the opening seems too wide, the pair bring clay and mud, which they plaster round about, and only leave as much space as will allow the bird to pass. Rarely do they select a breeding-place without first subjecting it to some alteration or mason-work. Both sexes take part in hatching the eggs and rearing the young. Mr. Selby says, "During incubation the female sits very closely, and it is almost impossible to drive her from the nest; she defends it to the last extremity, striking with her beak and wings, and making at the same time a hissing noise."

The eggs are from five to eight in number, sometimes as many as ten; coloured white, with rufous spots on the larger end. The nest has very little finish, being composed of dead leaves and roots only.

Nuthatches feed on insects, especially larvæ and chrysalids of beetles, which they find between the splits in the bark of trees. Small seeds are not much to their taste, but of beech-mast and hazel-nuts they are very fond.

They have no song, but produce different sharp-sounding notes, much like the *tsee-tsee* of the Tits, but stronger and more hissing. With respect to vocal powers, they are less developed than in the Tits. Their call-note agrees with that of the former, but is more powerful and clear-sounding.

It is stated by several authors that the Nuthatch has the curious habit of sleeping in a hanging attitude, with the head downwards. I have often had it in confinement for a long time, but never observed this: my Nuthatches always perched on a branch, and slept like most other birds, namely, with the head under the wing, and sitting either on the perch on one leg or on the floor of the cage.

In confinement it is a very amusing little bird, especially when there are more than one together in the same room. They are in the habit of knocking at the walls of their prison till a hole is made: to effect this a good deal of perseverance is required, and the birds seldom give up the task when once they have begun work, but continue to knock and hammer indefatigably until a hole is made: when two or more are together the drumming is continuous, till at last one makes its appearance in the room, having escaped through the hole. I have one in my possession, which has broken through three cages already. I gave it another kind of residence, of stronger construction — a large aviary, made of wire only; this time it hammered on the bottom of the cage, spreading splinters and chips all over the drawer. Afterwards I placed a piece of decayed wood in the cage, and the bird hammered and chiselled so perseveringly that the entire piece of wood was soon entirely destroyed.

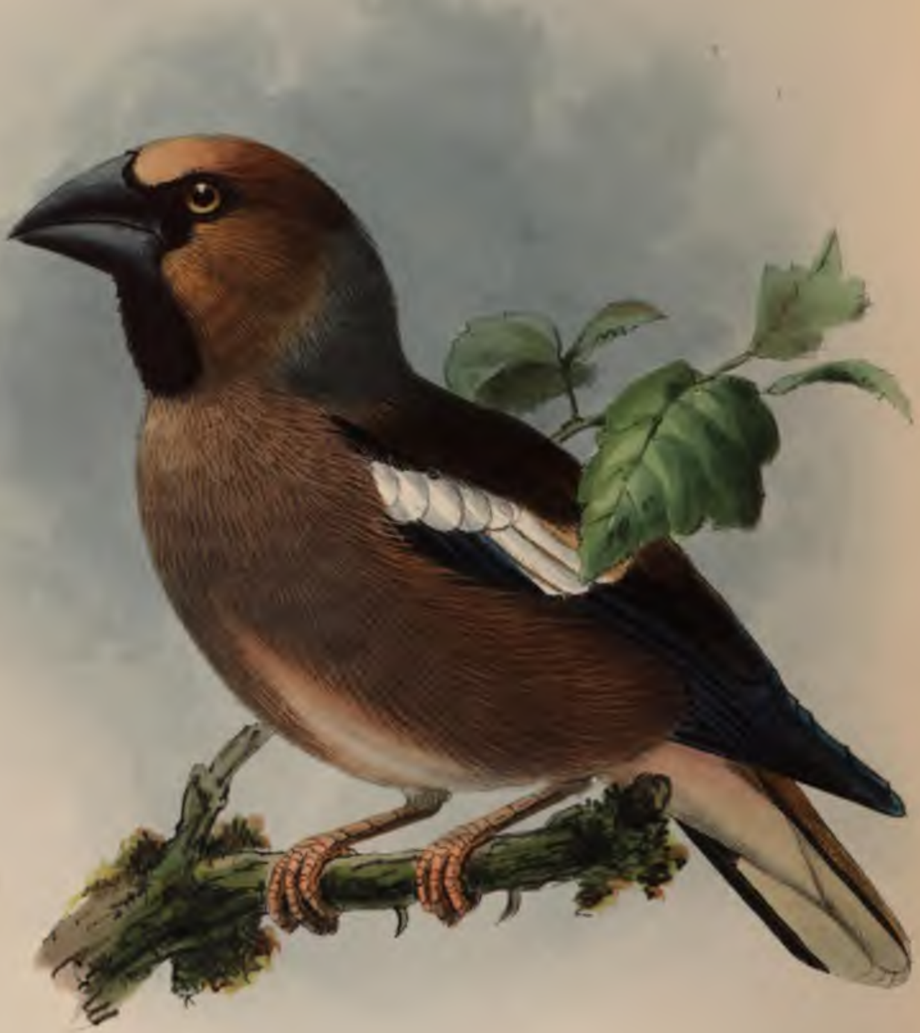
In the wild state they also break open acorns, in order to eat the larva of some moth which frequently is found inside them. They act in a like manner with apples and pears, and I have seen them, during winter, tearing medlars open with their beak, throwing away the fruit, in order to get at the insects hid within. If there is no opportunity to break the nuts or acorns, for want of a point of support, they carry off the object to some split or cavity of a stone or tree in the neighbourhood, fixing it between the fissure, and so extracting the kernel: this has been generally observed, and some naturalists have supposed that they lay up store, which, however, is not the case, though they may be seen repeatedly visiting the same cavity. The fact is that, in order to break the object, the bird returns to the spot every time with a nut or an acorn in its beak, not to hide, but to crack it.

Although the Nuthatch may be often seen alone, it prefers to live and fly with other birds: it may occasionally be found in company with wandering Titmice, or other migratory birds.

In captivity it should be fed on hemp-seed, beech-mast, hazel and other nuts, and occasionally a few crumbs of bread and some mealworms. Last summer I had a nest with six young ones, which I fed on beef and egg, and afterwards on egg, bread and crushed hemp-seed minced together. The birds grew very quickly, but two of them died shortly afterwards, one escaped, and another became lame. I found it rather difficult to induce them to change from insect food to seeds or harder nuts.

The Nuthatch requires a strong cage with wires on all sides; a piece of bark of a pollard-willow should be placed in one corner, so as to give it the satisfaction of destroying some object with its beak.

The following account shows how great is the perseverance and capacity of the Nuthatch in using its beak as a chisel:—Two boys near London had caught a female, by taking it from the nest-hole. Having no cage, they tied up the bird with a string attached to one of its legs, and made fast to a table. Instead of undoing itself from the string, which would have been a task of but little difficulty, the bird set to work upon the wood, and within three hours broke it away so far as to effect its escape. Unfortunately the string remained attached to it, which this time caused the bird to catch itself. It was found in a tree nearly strangled by its efforts to escape, the string having got wound round the body so tightly that the tangle had to be cut in order to get the bird safely out of it. But the greatest misfortune of the luckless bird was to fall again into the hands of its captors, for it was one of the same boys who found it in this deplorable situation. I bought the bird, and had it alive for some weeks, when one day I found it dead in its cage, hanging between the wires: this time at least it had succeeded in strangling itself.



J.G. KEULEMANS DEL. ET LITH. P.W.M. TRAP EXC.

COCCOTHRAUSTES VULGARIS.

formation of which seems so out of proportion. The localities it frequents do not furnish such a description of food as would call these powerfully constructed mandibles into play, the bird feeding on seeds, cherries, pease and insects. Its bulky shape also would lead us to suppose it to be a very slow moving creature, yet it is much more active than the Bullfinch, very quick when on the wing, and is in more continual movement than the slender-bodied Blackbird. Although apparently a very stupid bird it is extremely intelligent and wonderfully cunning; it is as defiant as the Sparrow, cautious as the Magpie, and as shy and retiring as the Golden Oriole.

The Hawfinch prefers to dwell in chestnut and lime trees, where it can easily conceal itself amongst the thick foliage; it may often be met with in orchards, especially when the cherries are ripe; it shows great partiality for those localities where peas are cultivated, and will do much damage to this vegetable unless precautionary measures are taken. Its principal food consists of seeds, either small or large, and fruits. Among the former are hemp-seed, alder-seed and beech-mast. Young leaves and buds are taken very readily, and also pips of pears and apples are much to its taste. It also eats insects, such as caterpillars, cockchaffers, moths and butterflies, which are captured on the wing. It is generally said that the Hawfinches take the stones of cherries, cracking them in order to get at the kernel; some authors even state that they reject the fruit, eating only the pips. I have never seen the bird crack a cherry-stone, although I have fed some individuals on cherries during several successive days; they took the soft part and left the stones: I then gave them the stones only, which they turned, examined, and then flung outside the cage, without a single attempt being made to crack them. Afterwards I gave the kernels, which the birds took, though with no great eagerness; they evidently preferred the fruit. I observed that when the cherries are peeled by the bird, the stone is cast away by a pressure of both mandibles, sometimes with such a force as to fall down at a couple of yards distance, while at other times I have heard them strike against the walls of the cage.

Hawfinches build a rather handsome nest, similar in form to that of the Chaffinch, but wider. It is composed of roots, pieces of bark and lichen, often fine twigs or herbs mixed with the other materials; there is a great deal of lining in it, usually an abundance of horse-hair. The eggs are from four to six in number, of a light greenish grey, with rather indistinct dusky streaks, with large dark brown spots here and there. The eggs resemble, with respect to the markings, those of the Chaffinch, but the colour of the shell is much darker and greener. Dr. A. E. Brehm states that the Hawfinch breeds twice a year.

The young ones are soon able to fly, and after leaving the nest remain a long time in company with their parents, always carefully hiding in the thickest of the foliage. Up to the time of being able to provide for themselves, their beak is less heavy in appearance and not larger than that of the Greenfinch (*Fringilla chloris*). In this early stage they take soft food, as the mandibles have not attained a sufficient degree of hardness. Their plumage varies somewhat from that of the old ones, principally by the absence of the black spot underneath the beak. The head and throat are of a yellowish tinge, the sides and vent being spotted. Yet Hawfinches in every state of life are easily to be recognized by their clumsy structure, the distribution of colours of the plumage, their very pale-coloured legs, as well as by the peculiar formation of the secondary quills, which have been likened to the figures of some of the ancient battle-axes. The female is a little greyer than her mate.

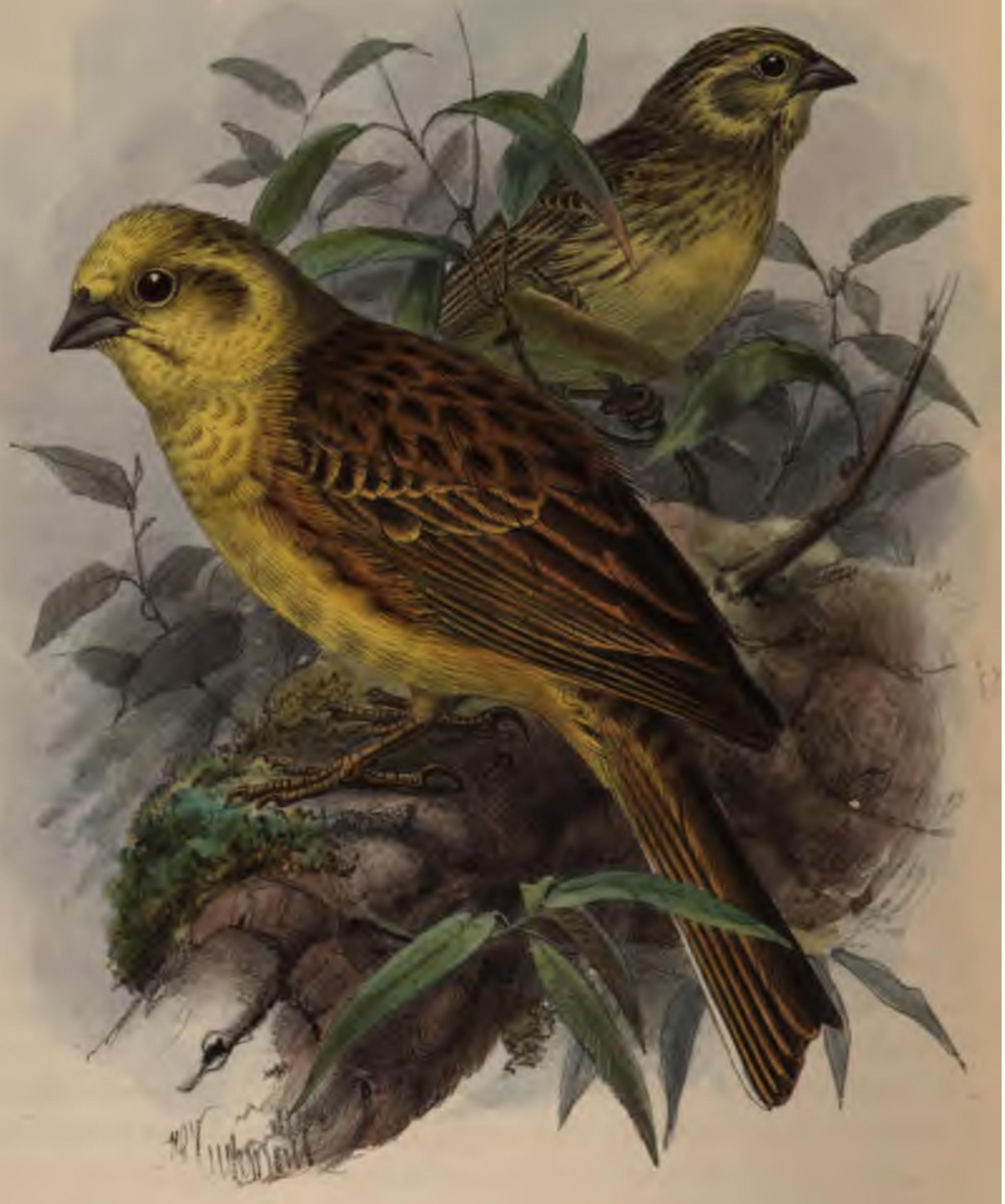
Hawfinches are difficult to catch, owing to their shyness, while of the freshly-caught individuals many die, notwithstanding the most careful treatment. As a cage bird they have little in their favour to recommend them, except their soft colours and funny antics. A better result is obtained by bringing them up from the nest, when they will get very tame, and if placed in the vicinity of a good singing Canary, Bullfinch, or Linnet, the males, and often the females, imitate the song of those birds; while a Hawfinch caught when adult will rarely produce a note.

The natural song is pleasant and merry, though less melodious than that of the linnet, with which it moreover has some analogy. It is a whirling chat, a combination of stammering notes, intermingled with a ventriloquial soft sound, in which respect it resembles the soft song of the Bullfinch or common Crossbill.

Hawfinches should have a variety of food, which, however, must be given separately, as the bird is in the habit of selecting and eating the nicest part first, and so throws away the remainder. The best and most suitable seeds are hemp, canary and flax. For change it should have some green peas, cherries, apple-pips, some chickweed, and other vegetable products, such as anthers, buds or blossoms. They will take a meal-worm and play a long time with it before swallowing: the meal-worm is passed between the mandibles until broken up, being often laid down and then taken up again. The cage in which the Hawfinch is kept should be a strong one, and the door securely closed, as most individuals amuse themselves by pecking and wriggling at the fastening until they effect their escape. If the bird is held in the hand great care should be taken to avoid its bites, which are often so painful as to compel one to loosen one's hold of it.

Hawfinches are often formidable companions in the aviary; the least annoyance makes it angry, and the smaller as well as the larger birds are treated with severe bites on the legs and neck. The enormous bill, stiff and large neck, also the yellow eye with the dark feathers round it, greatly contribute to give the bird an obstinate look and a serious dignified appearance.

I possessed a very fine and large one, which was placed separately, owing to its pugnacious inclinations. One day it succeeded in opening the door of its cage and flew about the room, perching on the cages of the remaining birds. In one corner of the room there was a large cage containing an American Baltimore-bird, of similar irritable temper. I tried to capture the thick-beaked fugitive, as I had an impression that a severe fight was imminent if it settled on the cage, the more so as the Baltimore gave expression to notes of defiance and made very suspicious movements. By driving the Hawfinch from one spot to the other it settled on the cage, and *coups de bec* were at once exchanged. The most amusing part of the battle was that the Hawfinch could not bring its large beak through the wires, and thus did not touch its rival, while on the other hand the Baltimore, with its long and slender bill, administered severe punishment upon the Hawfinch's legs. The combatants were so much engaged that they did not see me approach, and I was thus enabled to catch the latter with my hand.



J.G. KEULEMANS LITH. M & N HANHART IMP.

EMBERIZA CITRINELLA.

THE YELLOW-HAMMER

(Emberiza citrinella).

Le Bruant (French). *Der Goldammer* (German).	*De Geel-gors* *De Haverkneu* } (Dutch).

Buntings constitute a very extensive genus of birds, presenting several modifications as regards their structure. Some American subgenera are very closely allied to the *Fringillidæ*, or Finches, while several European species have an affinity to the *Alaudæ* by the formation and arrangement of the wing-feathers, as also the manner in which the colours are marked, and in some species the entire plumage assimilates closely that of the Larks. Most species of buntings are shy and retiring: their song is altogether in concert with their disposition; it is soft and plaintive and always the same tune. Lapland and Snow Buntings, which form the subgenera *Plectrophanes*, have a more pleasing low and warbling song, and also both named species are less retiring than the true Buntings.

Another peculiarity in the *Emberizæ* is exhibited in their eggs; in nearly all species the shell is streaked with dark, thin lines, similar to those seen in marble. In those of the Yellow-hammer peculiar marks, which have been, not inappropriately, likened to queries, notes of exclamation, points and commas are constantly present, for which reason this bird is called in some places of Holland, "the writer."

This well-known Bunting is a resident in England, and very common in flat and marshy localities. It frequents cultivated grounds, and lives on the ground as well as on the trees. Yellow-hammers are most numerous near farm-yards, or in places where pollard-willows occur. They are generally seen in pairs, or, after the breeding-season, in flocks; while in winter they unite with other species of birds, wandering from one place to another. If a male is found alone, singing its plaintive, monotonous air, it is almost certain that the female is sitting in the vicinity, for it rarely leaves its mate during the period of incubation. The female bird also is seldom seen without being accompanied either by the male or the young ones.

In some countries it seems to make partial migration; at least numbers are caught in Holland, Belgium and Germany during the months of October and November, while in winter several flocks regularly make their appearance in the South of Europe. It does not, however, seem to leave the Continent, none having been observed in North Africa. The Yellow-hammer is most abundant in Western Europe, while in the southern and eastern parts its place is taken by the Ortolan and Cirl Bunting.

In the Yellow-hammer the plumage of the adult male often varies according to localities and season. In the spring it is usually a little brighter, while in specimens from Holland and Germany the dark stripes on the forehead have entirely disappeared in the old male bird. Sometimes bird-fanciers cut away the dark points, in order to give the bird a brighter appearance; yet I have caught Yellow-hammers the head and cheeks of which were entirely yellow. The female is a trifle smaller, its plumage more spotted and not so bright a yellow as that of the male. The young ones resemble the female, though the greenish shade on the head and breast is absent, and their entire plumage a paler chrome-yellow, striped with dark brownish.

Yellow-hammers build a rather large and careless nest among herbs on the dykes, on pollard-willows, sometimes in cart-ruts in localities that are little visited. The nest is composed of grass and grass-blossoms, lined with soft fibres and a great quantity of horse-hair. There are generally two broods, each of from four to six eggs, of a dirty greenish white, veined and streaked with dark purple-brown, the veins nearly almost terminating in a dark point, forming the above-quoted query or comma.

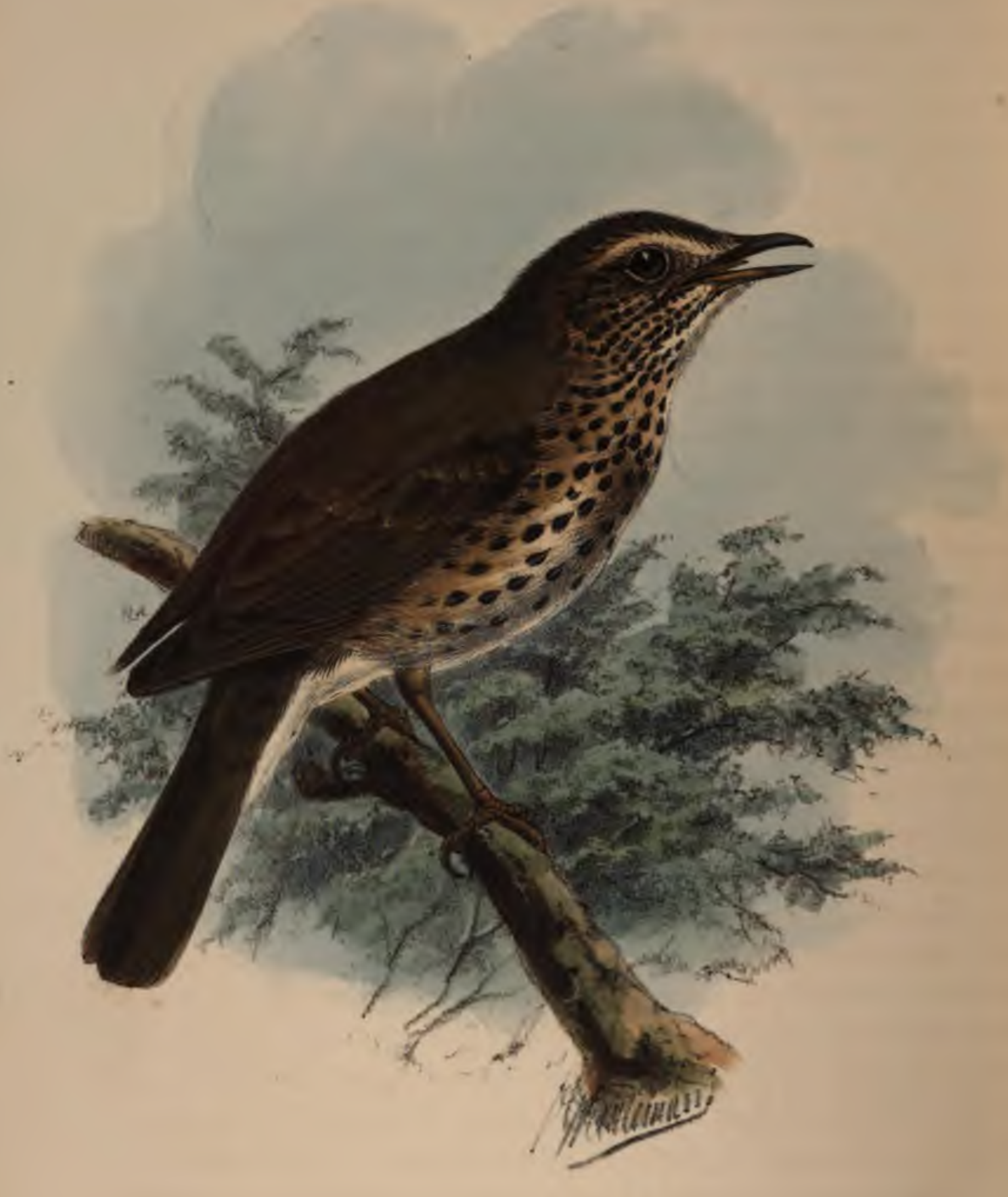
The young ones are fed with seeds out of the crop, and afterwards with caterpillars, which they find among the grass, in herbs, or in cultivated grounds. A pair of Yellow-hammers, during the time of rearing a family, will carry off great numbers of larvæ of the common white butterflies (*Pieris Brassicæ* and *P. Rapæ*), which are very injurious to the cabbage-fields. The seeds of shamrock and chickweed, as also strawberries, are much liked by these birds, so that with respect to the latter food they often cause as much havoc in one spot as they do good in another. In autumn and winter they feed on small seeds and grains. When the ground is covered with snow and food scarce they will come near the houses and poultry-yards, picking up the scattered grain: during this season cold and hunger make them a little more familiar, though always on the alert, easily frightened by objects even at a distance, and the first among the winter guests who take wing when danger approaches.

The call-note is a soft "*Zeeng, tseeng,*" and the song of the male is only a quick succession of the call-note; the last syllable is a tone higher and more extended, the preceding (being generally seven) are *staccatos.* Although it is a very monotonous song, it still has its attractions. It reminds us of the quiet and lovely summer morning, and may be taken as an indication that the weather is clear, if not fine, for the Yellow-hammer rarely sings when it rains. Generally it begins its song half an hour before sunrise, but in June and July it may be heard a long time before daybreak; it continues singing till about noon, and gives an afternoon performance about sunset. Often one individual may be heard for hours at the same spot, while usually it selects either a branch or a gate in a meadow, and there pours forth its soft and melodious lay.

Yellow-hammers apparently sleep little during the summer months, and many amateurs of cage birds are of opinion that about this time it does not sleep at all. Nearly every farmer or country resident in France believes it certain that the bird never sleeps in summer. It is quite certain that this Bunting makes no exception to the general rule, but nevertheless it seems to sleep a very short time during the night, for I have seen them making their escape from the higher branches of willows, and flying at great distances as late as ten in the evening, hearing their song again next morning at two, being about half an hour before daybreak.

As a cage bird it has but little to recommend it beyond its beautiful plumage. Some individuals will sing, but many will not; there are instances of their imitating the song of the chaffinch and canary, but such are very rare, and most Yellow-hammers never utter any sound except their call-note.

They are always alarmed at the approach of persons, and even show great fear for the smallest bird placed in or near their cage. All Yellow-hammers, whether reared from the nest or caught in any season, are shy. If they get tame it is only by the constant presence of its owner, but no sooner are they placed at some distance off than the same fearfulness and flying against the wires again commences. They are great cowards among the feathered race. I had two Redpoles placed in the same aviary with a Yellow-hammer and some other birds: the quarrelsome Redpoles seemed to be fully aware of its cowardice, for no bird suffered more from these little vexers than the Yellow-hammer, which, especially in the evening, was repeatedly driven from its perch. Buntings in general have very little intelligence; most of them do nothing but perch and eat, till they grow so fat as to be hardly capable of moving themselves; or they fly and hover at the wires, breaking their wing- and tail-feathers, and making their heads bleed by repeated attempts to escape.



J. G. KEULEMANS LITH.

M & N HANHART IMP.

TURDUS MUSICUS

THE SONG THRUSH

(*Turdus musicus*).

La Grive (French). *De Zanglyster* (Dutch).
Die Zippe (German).

Songster and musician! If these are terms sufficient to designate the vocal capacities of a human being, of how much greater signification are they when bestowed upon those birds which already, by their normal endowments, are great musicians. Song is as natural to the bird as flowers are natural to plants: both song and flowers are the adornments of Nature. There are bright, sparkling, lovely-coloured flowers, and small and insignificant blossoms. In a similar degree we have the song of birds. The melody of the Song Thrush may be compared to the various shades of a softly-tinted nosegay, full of flowers interspersed with leaves; while the plaintive yet caressing song of the Robin resembles the deep purple, the colours of mourning, diversified here and there with bright spots; and the gently warbling strains of the Whitethroat have their reflections in the mellow-coloured blossoms. The richest colours or purest tints may equal in beauty the music of the Nightingale, but cannot excel it. Of all known songsters, none surpass this vocalist in the sweetness, brightness, and deep expression of its song.

Much is said of the American Mocking-bird, but this, like most things having their origin in that part of the world, is, with respect to its qualities, much exaggerated. Canaries are admired; some of them are even wonderful singers, though the greater part are screamers which fatigue the ear by their incessant noise. If the Nightingale's imposing music could be heard for a longer period, or if its song were as bright in the cage as it is in a state of nature during the stillness of night, it would certainly be the first among the birds kept for our enjoyment.

Nightingales and Thrushes are famous rivals with respect to their pleasing qualities; however, what is gained by one is lost by the other. Nightingales are difficult to keep alive, difficult to make sing, and troublesome to rear; while, after all the care bestowed upon them, they rarely live longer than a year, even if they live so long. Yet their song compensates for this trouble.

The Song Thrush, being a resident, is easily kept alive, and early begins its fascinating music. It is very simple in its wants, and lives for years in confinement. As a singing cage-bird the Thrush stands first; while the Nightingale, on the other hand, as a song-bird is unrivalled.

Nearly all male Thrushes, either brought up from the nest or caught in autumn or winter, will continue to sing periodically for years, some even throughout the year. In the wild state it is often heard during the winter months, especially in the afternoon, when it emulates the Robins of the neighbourhood. In the gardens of the Zoological Society of London I have frequently heard such a duet or trio. Near the large entrance a Song Thrush established its domain some years ago, and is still rejoicing there, despite the crowd beneath it: three years ago I mentioned this musician as a very expert songster, and am much gratified at still meeting it there.

Song Thrushes are very common in England, and I believe that they are nowhere so often met with near towns as in this country. On the Continent they avoid the society of man, and very rarely come near the towns; while the vicinity of London abounds in these birds. In France and Germany the Song Thrush inhabits the woods and orchards, but rarely breeds except in thick-foliaged localities. In Belgium it is much less common, and in Holland a rare and much-sought-for species. In the countries of Eastern and Central Europe it is chiefly found in forests, but nowhere is it so numerous as in England. According to Brehm, the Song Thrushes are migratory in Germany, leaving, together with Redwings and Fieldfares, at the end of October. When migrating it occurs also in Palestine. The Rev. H. B. Tristram observes: — "Not very uncommon in winter. Chiefly in the Highlands. Noticed in Galilee in spring, but only occasionally." Many Song Thrushes are known to pass the winter in the South of Europe, especially in Italy, where hundreds are shot, and caught in nets and snares, and then killed for the poulterers. Nearly all the song birds wintering in Italy await certain death. Not even our Nightingales and Robins are spared; and thousands of our little summer visitants are killed and eaten in that country.

Song Thrushes often vary much in their shades of plumage and in size. Large specimens are generally of a more rufous grey, small ones of a rather brownish shade. The spots on the under parts also often vary in number and size, while in some individuals the sides and throat are of a very yellowish tinge. There is no external difference between the sexes; and the most experienced ornithologist will fail to distinguish them either by their colour or size. Some are of opinion that the female is to be recognized in spring (when she is or has been hatching) by the bare and swollen skin of the under parts; but it has not yet been determined whether both sexes hatch the eggs. The young ones are much like the parents, but the feathers of the upper parts are edged with light rufous.

The Song Thrush breeds twice a year, and begins to build, or to repair its previous nest, about the end of February. There are many instances of a Thrush hatching her full number of eggs before March, though generally none are laid before the end of that month. In the first brood there are usually five, sometimes six, eggs; in the second, generally four, rarely more than five; they are of a bright bluish green, much like those of the common Starling, but brighter. In size they agree with those of the former, though they are a little less pointed, and can at once be recognized by the dark purple spots distributed here and there over the shell, especially at the larger end.

The situation of the nest depends in a great measure on the quietness of the neighbourhood; it is found among the branches of bushes, under the foliage of ivy, in hedge-banks, sometimes on, or very close to, the ground against the trunk or roots of a tree, under heaps of dead branches, or (which is an exceptional case) in a deserted shed near cultivated ground or gardens.

Great diversity of opinion seems to exist as to the kind of materials used in the construction of the Thrush's nest. Some describe it as being composed of dried grass or hay, roots and moss, cemented together with cow-dung and decayed wood; and for lining, hair and feathers. Several naturalists record that a sticky substance is used in plastering, being a kind of glue or salivation, derived from the beak during the pairing time. I never succeeded in seeing the old birds while building, but have examined many nests obtained from different localities.

The various nests I succeeded in collecting all agreed in form and materials; a great quantity of clay was present in each, some weighing nearly two pounds. Cow-dung was to be seen in some, and these were the lightest. As to the glue or

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sticky substance, I can only say that in some of the nests a kind of glossy varnish was distinctly to be observed near the opening: this was only present in those nests in which young ones had been hatched, not in those found with the egg. The salivary glue to which some authors refer is probably nothing more than the glutinous fluid exuded by the snails with which the young ones had been fed. The decayed wood is usually that of the pollard-willows.

Song Thrushes feed on insects, snails, worms, berries and seeds. The young ones are reared on worms and the common garden snail (*Helix aspersa*), and also on many shell-less snails. The shell is broken first; the bird takes it in the beak and strikes it with some force against the ground, a stone or a branch. Hard-bodied insects, such as beetles, they never take, but their larvæ are much relished. Caterpillars, snails, small worms and spiders form their principal food during the summer. The berries of the mountain ash, hawthorn, elderberries and misseltoe are taken in autumn and winter.

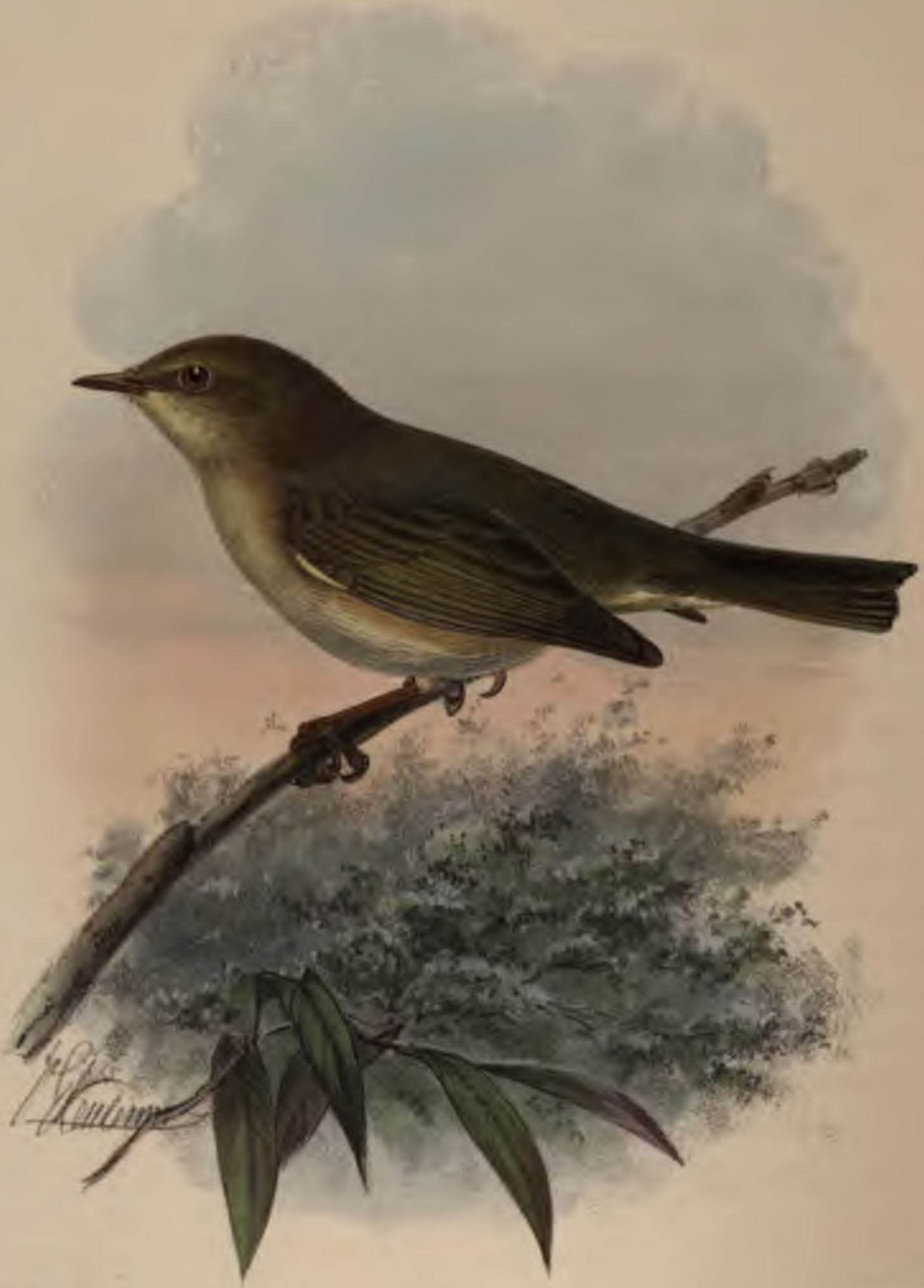
All kinds of Thrushes are timid, most of them very restless, many very quarrelsome. The Song Thrush is shy in nearly every locality, but, if undisturbed, will become more confident and even familiar. It is very restless in autumn, but quiet in the summer. It soon takes offence, and fights every bird approaching its nest, while in winter it sings a duet with the Robin. Nearly all our European Thrushes are migratory, flying in flocks of several species together. The Song Thrush, however, is generally seen alone, and rarely migrates in company with other kinds of birds. There is also a great difference in the vocal capacities of the various Thrushes. The Blackbird pipes, and has a regular but plaintive note; the Song Thrush, a clear, pure, loud and rejoicing melody, varied with *staccatos* and *tremolos*, joyful and sparkling at one time, soft and plaintive at another. We do not exactly know whether those species passing only the winter on our shores have a real song or not; some suppose that these species sing during the breeding time, thus in the North of Europe, and only utter their call-note when in this country. But the Missel Thrush, which is a permanent resident here, cannot claim any great commendation for its musical performances; that of the Redwing consists only of a sharp twittering; while from the Fieldfare scarcely any sound whatever is heard.

In confinement the Song Thrush, in particular, requires a clean residence; on the drawer of the cage a sheet of blotting-paper should be placed, and some sand or gravel over it: this will soak up all humidity of the droppings, and thus prevent dirty feet and claws. Song Thrushes often sit on the bottom of the cage, and soon spoil their feathers, especially the tail. The cage should be wide, about 2 feet long, 1½ foot high, and 1 to 1½ deep; wires on the front only will do better than on all sides, as the bird is easily frightened. Its food should be often varied and gradually changed, according to season or the age of the captive. Nearly every amateur of Thrushes gives a peculiar kind of food to his favourites; in Germany and in Holland they are fed differently; French birdfanciers have also their own selections. In England they are often kept on German paste, without any additional nourishment: this accounts for the rather omnivorous disposition of the species. A good food is made as follows: — Four spoonfuls of coarse oatmeal (or, instead of this, German paste), one tea-cup full of bread-crumbs, two hard-boiled eggs, and about half a calf's or sheep's heart; the whole mixed and rubbed together. Some minced cabbage, watercress or parsley may be mixed with it. Crushed hemp-seed will sometimes disagree with them, as no Thrush can digest fat of any kind. Ants' eggs are the best food to give them, and a meal-worm will often induce it to begin a song. In autumn it may have some boiled currants, berries of mountain ash, elder or misseltoe, and some snails. In winter they should have an increased quantity of heart or minced meat, and more egg than usual; for the better they are fed during the time they are silent, the more melodious and continuous will be their song in spring and summer. Some individuals are in the habit of eating their droppings; to prevent this a frame of wires should be placed above the drawer.

The young ones are very easily brought up. The best way is to take them, together with the nest, when about ten or twelve days old. They should be fed early in the morning, twice an hour; about the middle of the day, only once an hour; and in the evening, the last hour, three times. If fed upon minced beef and egg, some bread moistened in water, and small worms and snails, they will quickly grow strong and large. When they begin to peck at the food without inducement, they should be placed in a cage and some of the nourishment put between the wires.

Song Thrushes are caught in small nets and in snares; those brought up from the nest are generally the tamest, but not always the best singers. Such as are caught in autumn and winter usually possess a more powerful song than the former, but never get so tame and familiar.

The Plate represents the adult bird, reduced to two-thirds of natural size.



J. G. KEULEMANS LITH.

M & N HANHART IMP.

PHYLLOPNEUSTE TROCHILUS.

THE WILLOW WREN

(Phyllopneuste trochilus).

Le grand Pouillot, *Le Pouillot Fitis* (French).
De Fitis, *De Zomerzanger* (Dutch).
Die Fitis (German).

The Willow Wren and Chiffchaff are often confused, owing to their remarkable similarity in size, form and colours. When comparing the skins of both birds, great difficulties present themselves in distinguishing the species, as the chief and most distinct difference is exhibited in the colour of the legs, which in skins have dried and become dark. In living or freshly-killed specimens they are as follows:—Willow Wren, light rufous or dark flesh-colour, with chrome-yellow soles on the toes; Chiffchaff, uniform dark brown.

Both species have about the same colour of plumage, and one individual is often of a darker, lighter, greyer or greener shade than another; so that there are Chiffchaffs having the colours of the Willow Wren, and, on the other hand, Willow Wrens those of the Chiffchaff. However, by examining a series of each species, it will be found that the darker individuals are Chiffchaffs. The Willow Wren is not constantly larger and more yellowish than the other; and neither the typical colours nor the size are sufficient peculiarities to recognize each species by itself. A freshly-killed individual is to be identified by the colour of the legs. The specimens in skin are to be recognized by the following comparisons:—

WILLOW WREN.	CHIFFCHAFF.
Entire length, 4 inches 8 to 10 lines.	Entire length, 4 inches 6 to 10 lines.
Wing, 2 inches 5 to 7 lines.	Wing, 2 inches 3 to 4 lines.
Tail, 2 inches.	Tail, 2 inches.
Tarsus, 8 lines.	Tarsus, 8 lines.

The above measurements are taken from several individuals of both species, and will show that they differ very little in size, except in the wings, which are always longer in the Willow Wren. As to the tail, I have adopted the most certain and easy means, namely, by pulling out a middle tail-feather. I think this a preferable method (though not to be adopted in rare birds, or in those species with a forked or pointed tail), as the caudal vertebræ are often confused with the tail itself.

Concerning the colours of both birds, little remains to be said; the colour of the Chiffchaff is usually nearer to a rufous, that of the Willow Wren to a greenish, shade. In some Chiffchaffs the feathers of the throat, as well as the ear-coverts, are spotted with a distinct sandy or dirty shade; the same is visible in Willow Wrens, though these feathers usually are more inclined to a pale lemon-yellow.

Both species are common summer visitants, arriving very early in April, sometimes at the end of March. Usually the Chiffchaff is seen, or rather heard, first of all our summer birds, and the Willow Wren a few days afterwards. The males do not seem to come earlier than the females, as during the two preceding springs I saw both sexes of each species shot in the first week of April. On the 9th of the same month I bought two Willow Wrens which were just caught; one died next day, and on examination I found it to be a female.

The habitat of the Willow Wren and Chiffchaff extends over nearly the entire Continent of Europe, with the exception of the most northern countries; they are also found in Northern and North-eastern Africa, and are winter visitants in Palestine; in North-west Africa they do not seem to occur. The specimens of *Phyllopneuste* procured from South Africa are considered to belong to the species of *P. trochilus;* they are confined to Damaraland, Ondonga, and of very common occurrence near and in Cape Town.

The Willow Wren frequents gardens and orchards; during the summer months it is always to be met with in parks, along the roads, in high trees and bushes, but rarely in dense forests or isolated localities. In autumn, when migrating, it visits hedges, and then is seen nearly always alone in the highest branches of pollards. Sometimes it stays rather late in autumn. Mr. Harting states that he observed the Willow Wren on September 30th : this may be considered very late, as in Holland and Belgium none are seen after the middle of that month. The Chiffchaff, on the other hand, I have caught as late as the 4th of October.

The sexes do not exhibit any difference in colour, but the young ones are a little browner on the upper parts, and of a more chrome-yellowish tinge on the under parts. In young individuals the soles and also the whole tarsi are of a very clear yellowish, in which respect they already differ from the young ones of the Chiffchaff.

Willow Wrens are of a very lively disposition, in shape somewhat slender, and during their movements seem to be very high on the legs. They are more active than the true *Sylviæ*, always creeping through branches, or hovering round about or under the leaves, and nearly every movement indicates the capture of some small insect. In seizing it the body, and especially the neck, is often considerably raised: I have frequently observed them very closely, and always admired the rapidity with which they thrust forward the beak at some insect; I saw them doing this continually, which accounts for the great quantity of small insects they consume: the old ones, when searching for food for their progeny, take up as many small spiders, caterpillars and gnats as they are able to contain in their little beaks; then they go off at once, to return to the same spot shortly afterwards. I believe they feed a good deal on leaf-lice, as I once caught three individuals, within a short space of time, which came one after the other to pick up the lice from the leaves of a lime tree, and as each of them came it settled on the same branch; I suppose they had been there before, and knew the spot as a productive haunt. I have never seen them take any berries, though I am induced to believe that they often peck at them; at least the Chiffchaff and the Wood Wren are berry-eaters to a certain extent. The Willow Wren feeds its young ones on small caterpillars and gnats, and, as they usually nestle on the ground, we may suppose that ants' eggs are distributed among the progeny.

The nest is a very interesting one; it is of a rather large size, and consists of such materials as are peculiar to the spot where it is situated. It is built in some hollow among grass and moss, sometimes between the roots of a tree, or on a flattened trunk of a pollard-willow, if this be a very low one and covered with moss. The nest is composed of dried and fresh grass-stems, herbal fibres, some thin roots, and a great quantity of green soft moss; it is lined with feathers, usually those of the common fowl. In form and size the nest is variable; it is cone-shaped, more or less depressed, and has a lateral opening. For this reason the Willow Wren is often called, by country people in Holland, the Oven-builder or Oven-bird.

The eggs are from five to seven in number, of a milky white spotted with red, having a rather glossy and delicate shell. The breeding time begins about the middle of May, rarely before that time; and the young ones require a rather long period before they are able to fly. In 1868 I found a nest containing five very young ones, which, however, I left undisturbed, they being too young to be brought up; they were blind, and apparently but two or three days old. About a week afterwards I went again to inspect the little family; they had grown perceptibly, and could see by this time. Five days elapsed before another visit was paid to them (they being then about fourteen or fifteen days old), and still they were found all inside, opening their little beaks for nourishment. I wondered the old ones did not take offence at being so often visited, as Willow Wrens are apt to forsake their progeny if their abode be once disturbed. I visited the spot at intervals, from mere curiosity, and scattered some ants' eggs near the nest; on each occasion the old birds anxiously watched me, though at last they seemed to gain confidence, and became accustomed to my visits. Twenty-two days afterwards I found the nest deserted, and saw the young ones flying with their parents at some distance. It was raining heavily at the time, causing the little family (and myself as well) to move slowly among the wet foliage: they were very tame, owing to the rain interfering with their progress. As I could thus approach rather near them, I tried to catch one or more by moving the branches, in order to let some more water drop on their wings, thus preventing them from flying. By this novel system of birdcatching (previously practised in the forests, during the rainy season, in tropical Africa) I obtained two young ones, which I afterwards liberated, fearing they would not survive captivity.

Willow Wrens are often caught in snares or traps, but, owing to their delicate nature, seldom survive till next day. If the captive takes food there is hope that it will become used to its cage, and give utterance to its melodious, joyful strain. They have a most pleasing song; it is a short strophe, composed of about ten or twelve notes, of which the first are uttered quickly and in a high key, the remainder gradually descending and diminishing in volume of sound. The Willow Wren repeats its little musical tune from time to time, sometimes pausing for some five minutes, and then commencing again. Its call-note, a sweet, pure and very audible "*poo-eet*," is not so frequently heard as that of the Chiffchaff. It always calls when something peculiar or surprising attracts its attention, a cat for instance. It resembles the call-note of the Redstart, but is purer, fuller and more musical. I have observed that the Willow Wren will imitate the song of the Chiffchaff, and the latter the call-note of the Willow Wren. I am certain about this, having had both species in separate cages, one calling the other with the same "*poo-eet*," the same pure, musical sound being produced by both. Another time I heard a bird singing like the Chiffchaff, or rather uttering the notes "*chiffy chaffy*;" there was no other bird near it, and I shot the bird while singing. It had yellowish legs, pure yellow soles, and proved to be a Willow Wren in all respects. I communicated this fact to several naturalists, and quoted it in my Dutch work on 'Birds of Home and Garden,' but before doing this I consulted every book within reach to see whether I was not mistaken in the names of the birds, or whether the same fact had been previously stated by some practical ornithologist, but I did not find any remark on these subjects. Careful investigations proved to me that the bird of which I heard the note "*chiff-chaff*" was a real Willow Wren. I tried to get as many living specimens of both species together as possible, in order to make further investigations, and to have the fact ascertained and observed by other naturalists. The call-note of the Willow Wren was often imitated by my Chiffchaffs, in the presence of several amateurs, occasioning them great surprise. However, I did not succeed in keeping them alive a sufficient time to hear both species sing; they died one after another, within two months, without any of the little captives having produced their song. Yet at other times I have kept Willow Wrens throughout the summer, and one individual lived for more than a year in the cage. I found ants' eggs a very suitable and acceptable food, and gave about a spoonful every day. Another sort of food, upon which they always seemed to thrive, was made as follows: — A teacup full of milk and one egg, boiled and then suddenly cooled, thus forming a kind of custard; this to be mixed with crumbs of bread and some scraped beef; scraped carrot mixed with ants' eggs is liked by most individuals. In case ants' eggs cannot be obtained, gentles and leaf-lice may be given instead; large meal-worms should be cut into small pieces. I often tried elder-berries, but the birds never touched them.

When used to the cage, the Willow Wren will soon utter its song and become very tame; it will take a small meal-worm or fly out of the hand, and often remain perching quietly, attentively looking and snatching at flies passing through the cage.

Willow Wrens, in proportion to their size, take a large quantity of food; if fed on caterpillars or other substantial nourishment, they eat as much as their own weight daily. If they like the food given to them, they eagerly fill their crops as soon as a fresh supply is given, and then sit down waiting till it has passed into the stomach. A meal-worm is swallowed entire and at once; while most other soft-beaked cage birds play with it or pass it several times through the beak. The Willow Wren is so ravenous that it often over-feeds itself, and casts up the food again. It should therefore be fed two or three times a day, and in small quantities each time. Owing to its delicate nature it can neither stand cold nor wind, and change of temperature alone is sufficient to cause its death. If the bird is kept in a room, it should permanently remain there, and the cage not be hung outside unless the weather is warm and fine. It likes the warmth of the sun, especially in winter, when it should be placed in the sunlight as much as possible. The time of moulting is about August, and lasts some four or five weeks, during which time it should have some additional meal-worms, and one or two drops of wine in its drinking-water.

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A
NATURAL HISTORY
OF
CAGE BIRDS.

BY

J. G. KEULEMANS,

LATE ASSISTANT TO THE MUSEUM OF NATURAL HISTORY OF LEYDEN.

WITH

SIX COLOURED PLATES DRAWN AND LITHOGRAPHED BY THE AUTHOR.

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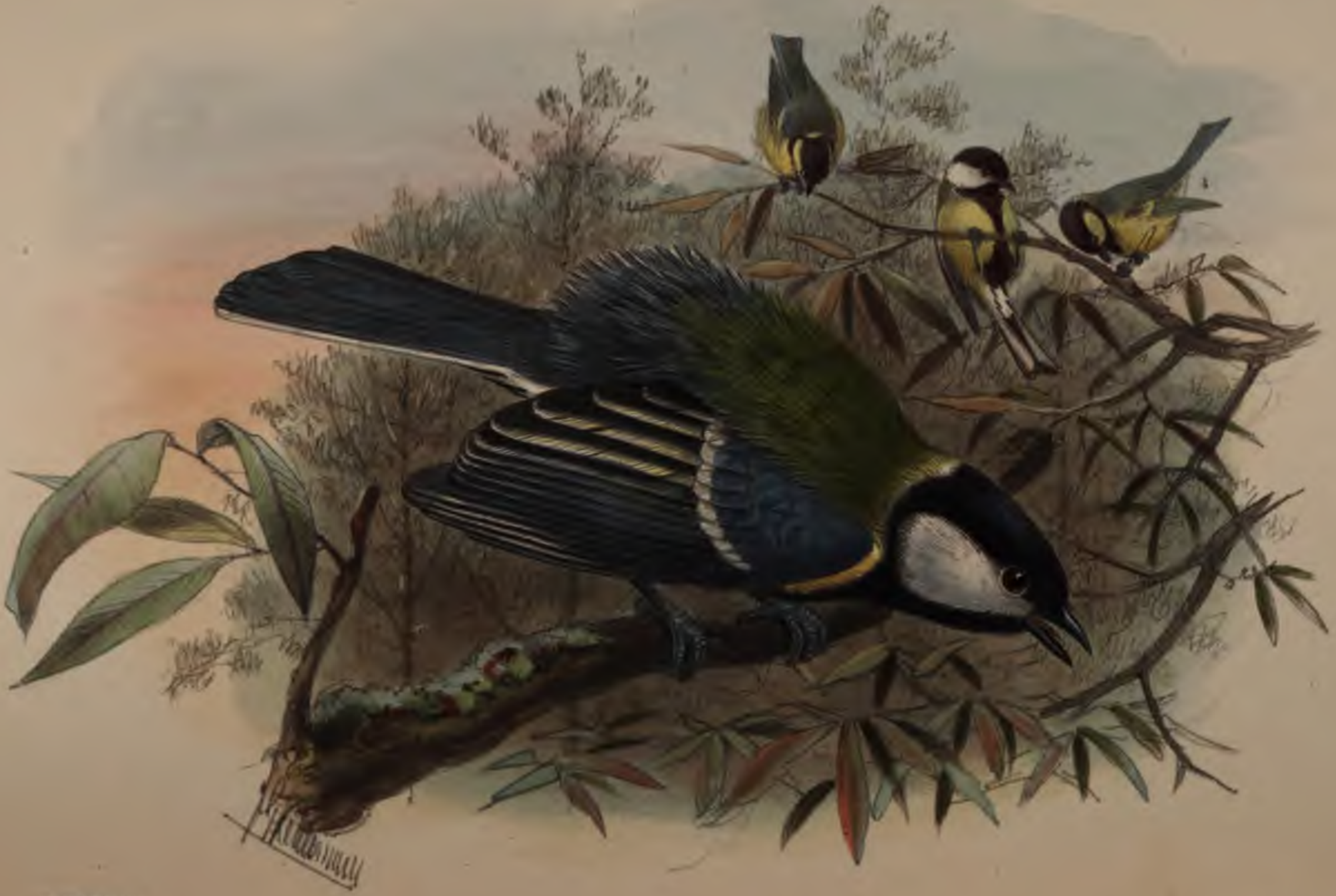

J.G.Keulemans lith.

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PARUS MAJOR

THE GREAT TITMOUSE

(Parus major).

La Grande Charbonnière (French).	*Güerrero, Quive-vive* (Spanish).
Die Kohlmeise (German).	*De Koolmees* (Dutch).

THE Large or Great Titmouse is a very common bird throughout temperate Europe. In the north as well as in the south of the Continent it is, however, of rarer occurrence; but, in all countries where it breeds, flocks of wandering individuals may be seen throughout the winter: although not quite so numerous as its congener, the Blue Tit, it is still not an uncommon visitant to our gardens, especially during the winter, when it is distributed over the entire country, visiting every district, either rocky or marshy, and often also the towns.

It is the strongest and most muscular of all the European Tits, the most courageous and also the most malicious of the genus. In winter it almost becomes a bird of prey, and during that time no European bird of similar size exhibits such an intrepid disposition as our well-known black-head. Its interesting and often curious habits have always attracted the attention of observant naturalists. A. E. Brehm, whose writings show him to be so well acquainted with the feathered race, in alluding to the Tits, says: — "They are highly skilled artists, yet they are botchers. They are no song-birds, although they sing throughout the day, summer, autumn, winter and spring. They are no climbing-birds (*Scansores*), nevertheless they climb with as much ease as the Woodpeckers and Parrots. Although they do not possess carpenters' tools (beaks), like the Woodpeckers, they pick and knock at every trunk and branch. They are no birds of prey (*Rapaces*), yet they steal and rob throughout their life. For professional fighters or strugglers they are not constructed, notwithstanding which they are always waging an endless war with smaller or larger birds and animals. They are always found in each other's society, and still are jealous one of the other."

Every one who has observed the Tits will certainly agree with Brehm's accurate description; yet much remains to be said concerning them: their vocal capacities, for instance, are worthy of especial consideration. Although the different sounds produced by the birds are sufficiently known, yet we are not so generally acquainted with the true meaning of these sounds, for the Tits have a language of their own, and express their feelings distinctly enough to be understood by an acute observer. They repeatedly utter a succession of hissing notes, their "*tsee tsee*," which is their common call-note; but they have, besides, special call-notes. When, for instance, a dangerous or suspicious object is observed by them, or when they are engaged in a mutual attack upon an owl, or an apparently sleeping cat, the "*tsee tsee*" is repeated more quickly, loudly and continuously; and there is usually a series of "*tsees*," followed by a clear-sounding "*peenk-peenk-karrr*." The more quickly the notes succeed each other, of so much the greater importance is the fact which is announced by them. No sooner are they aware of an object of especial attraction than a peculiar hoarse chattering note is uttered by the entire flock. If the object is a little owl, their greatest foe, then a series of sounds expressing their anger is heard from them; and besides the hoarse, loud, chattering noise, there is a very quick succession of "*peenks*," and loud and similarly quick "*tsee-tsee-karrrs*." If attacked they produce a very audible hissing. During their free and undisturbed movements among the trees, and also when an individual is quite alone, a soft and slowly repeated "*ee-ee-gaw*" proceeds from them. In spring the same sound is modified, and then sounds like "*tsee-tsee-peenk, tsee-peenk, tsee-peenk*," &c., often repeated some fifty times. There is another sound heard about the same season, and from the male only, being a long series of "*peenks*," very clearly and loudly uttered, so as to be heard at great distances. This peculiar note is the call of the male for a female, which is perhaps the reason why the bird so indefatigably repeats it, and reminds one of the striking of a hammer on an anvil heard from a distance. For this reason the country people in some German districts call it "Die hammerschmitze" (hammer- or blacksmith). When wandering and flying in flocks, they call each other by a sharp "*see-weet-weet, tsee tsee weet, weedee weedee*," &c., which notes are often interrupted by a deep and loud staccato, "*peenk-peenkpeenk*." This is the call-note, which is so well understood by the Blue, Marsh, and Cole Tits; while the hoarse chattering noise, uttered at the sight of something curious, is evidently comprehended by the Robin, Jenny Wren, Nuthatch, Creeper, Hedgesparrow, and both kinds of Regulus.

In the summer the Great Tit has a song, or rather it produces a mellow warbling; yet it does not sing after the manner of most other songsters, which either perch, puffing out their feathers, or take passionate attitudes while displaying their melodies: the Great Tit goes through a series of regular motions while pouring forth its song. The vocal abilities of the female are as much developed as those of her mate, only the before-named call-note in spring is not heard from her. The young individuals, as soon as they leave the nest, imitate the different notes of their parents, but their sound is very weak and hoarse. After two months no difference is perceptible between the sounds of old and young birds.

With respect to movements, few birds are able to assume so many different attitudes as the Tits, and their manner of proceeding amongst the branches, while searching for food, is amusingly interesting to observe. A Tit, and especially *P. major*, jumps, hangs, creeps head downwards and upwards, balances and swings; it hammers at fissures and holes in trees; it takes the food between the toes, making a hole in it or breaking it into pieces. Its movements and habits resemble those of the Woodpeckers, Nuthatches, Creepers and Shrikes.

In winter, when food is scarce, the Great Tit will attack smaller birds, such as Kinglets, Creepers and Jenny Wrens. I once heard of a Tit which had been seen with a living bat in its beak: it flew with it to the ground, and there hammered a hole in the head, eagerly swallowing the brain of its dozing victim. A similar fact was observed in England. I have seen them fighting very fiercely together, and the vanquished fall down bleeding severely from its head and legs.

But they are no professional fighters nor murderers, like the Shrikes, and only engage in warfare when excited or extremely hungry.

All true Tits agree in habits, while the larger the species the greater the intelligence. The large Tit, for instance, is more daring and more cunning than the smaller species. It is an acute investigator, and always considers first and then acts. Excitement only makes it forget its safety, and, despite its intelligence and nimble movements, it may be captured by the most simple means if its passions are roused.

During the pairing season great fights take place among the males; and even when paired, or when the female is hatching, strange males endeavour to drive away the real owner from its abode.

They are very slow in constructing a nest. I once observed a pair of Tits building for more than a week in a hole of a willow, when afterwards they removed to a slit in an old oak, taking the materials from the previous spot. In Holland the birdnesting (or rather bird-disnesting) boys describe the Tits as making sham nests, in order to deceive them.

Generally not much labour or care is bestowed upon the residence, and the materials are arranged according to the width of the hole. In most cases the entrance is a very narrow one, and the nest is often more than a foot below the opening, making it nearly always impossible to observe the eggs or process of incubation. The materials which are used in the construction of this careless nest are very variable; in fact, most Tits take for this purpose all kinds of soft substances which they find in the vicinity. Moss and feathers, as well as hair and wool, are generally used to form a soft bottom.

In the first brood, about the end of April, there are sometimes as many as twelve eggs, the ordinary number, however, being from seven to nine. They are white, with some red spots on the larger end, like those of other true Tits, but larger.

It is highly probable that the male assists in hatching the eggs; for although the female sits during the greater part of the day, her mate may be seen going inside the hole, when the female immediately leaves. I once caught a hen bird on the nest, and when, some hours afterwards, I tried to take away the young ones, another old individual escaped out of the hole: this evidently must have been the male, unless the latter had succeeded in finding a second female in the mean time. The eggs are hatched in twelve or thirteen days, and the young family may be seen flying round about in the neighbourhood some fifteen to eighteen days afterwards. There is a second brood at the end of June, usually containing no more than from six to nine eggs.

The young ones are fed on caterpillars, gnats and spiders. The food of the old birds consists of nearly all kinds of beetles, moths, spiders, flies, bees, wasps and caterpillars: they destroy the eggs of a great many injurious insects during autumn, while thousands of caterpillars are consumed in summer and spring. Of all our birds none are so useful as the Tits, and especially the larger species. There are no better means to prevent the augmentation of destructive insects than by protecting the Tits, for they are the very guardians of our fruits and vegetables, and the most suitable gardeners to look after our flowers and ornamental plants. One individual alone consumes, on the average, one hundred caterpillars daily, being more than its own weight: if it should feed on nothing but insect-eggs during a whole day, about 10,000 would be required for a single individual; yet the number carried away by both parents, during the fifteen to eighteen days of rearing their family, will increase the number (of caterpillars) to about 700 daily, making a total of 11,200, for the consumption of a pair and their young ones, during the rearing of the first brood. This fact shows how perfect is their sense of sight: surely no entomologist would ever find so many insects as a Tit. In autumn they feed on beech-mast, hemp-seed, pips of pine-cones, and also mulberries.

Nearly all the food taken by these birds is placed under the foot, and, curiously enough, almost always under the left one. If it is a beetle or larva, the head is first taken off and thrown away, and then the soft parts are consumed in small quantities; hard substances, such as legs, wings or skin, are rejected; of spiders, only the body is taken, the head and thorax being left. Nearly all seeds are held between both feet: a hole is made, the kernel eaten, and the shell dropped. Sometimes a great deal of force and perseverance is necessary to break open a seed, and it is often turned and tried on the other side. Insect-eggs are picked up after the manner of the soft-beaked birds, but spider-eggs (which are wrapped in a soft cocoon) are placed under the foot, the tissue torn, and the seed-like eggs swallowed one after another with the utmost avidity. Owing to continuously filling their crops and stomachs, and the great thirst thereby created, a large quantity of water is required daily. They are as hasty in their drinking as in their eating, and never take more than one or two drops at a time. They will also drink hogwash and milk if they are to be obtained.

There is but little difference in the appearance of the sexes or in the age; the male is a trifle stouter and more glossy, and the black stripe on the under part of the body is a little broader and extends to the belt; the wing-coverts are of a little more bluish shade than in the female. The young ones appear as if washed all over with a greenish yellow, and have very soft and rather loosely constructed feathers;

they are a trifle smaller than the old ones: when about five or six weeks old the first moult begins, and they seem to lose a great quantity of feathers at once; many also are seen without any tail. I have caught young ones of a second brood which did not moult until the next spring.

Tits can be captured in trap-cages, snares, and with limed sticks. In autumn, when they wander from one locality to another, and while in the enjoyment of each other's society, they are easier to be caught, as they are then merry, playful, and less cautious than at other times. In winter, when snow has covered the trees, and food is difficult to be procured, they are easily taken with any kind of trap, hemp-seed or a meal-worm being used as a bait. About the pairing-time the male forgets its own safety when a hen bird is heard in the vicinity: by placing a female in a trap-cage many males will be attracted, and fall victims to their natural instinct. Young ones are not so intelligent, and the whole family may be obtained at once by adjusting a net (like that used for catching butterflies) before the entrance of the nest. It is difficult to bring them up from the nest; while, on the other hand, if captured a few days after leaving it, they will take kindly to all kinds of seeds.

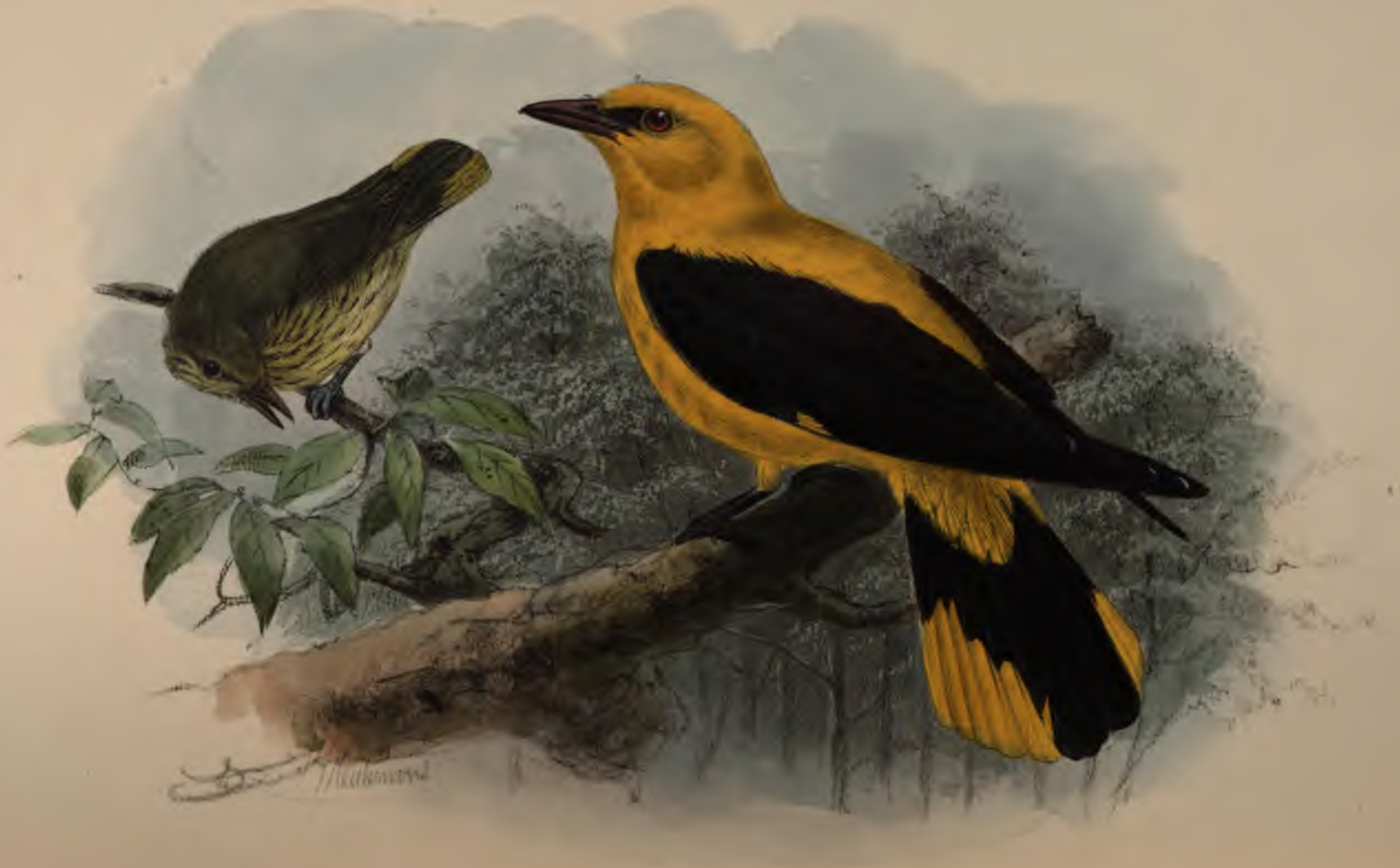
In confinement the Great Tit will be satisfied with hemp-seed and some fat or grease. Yet all true Tits are nearly omnivorous, and will take things rejected by many other cage birds. For instance, they are very fond of oily nuts, cheese, butter, potato, or boiled fish. They like milk, but the constant use of this will cause the Tits (especially the large one) to lose their colours; the gloss of the feathers of the head disappears, and becomes a greyish black; the yellow under parts turn white, and even the soft green on its back changes into a dusky grey. In this state it is not unlike the Japanese Tit (*P. minor*).

The Great Tit is one of the most playful of our cage birds. It is in continual movement, — hangs on the wires and walks on the upper wire of its cage, makes all kinds of nimble turning bounds, and even performs the most skilled summersaults, especially if the cage is a small one. Despite its merry disposition, it is a fearful companion in the cage, and will often attack its weaker companions. Its strong and sharp-pointed beak is a formidable weapon, the more so as the blows are always aimed at the skull of its victim: no sooner is the skull broken than it eagerly picks out the brain, and a Tit, having once tasted this, will kill every small bird within its reach. The males are the most atrocious, and, among freshly-caught individuals, many show such a degree of bloodthirstiness as to kill all the remaining captives one after another. Some also are incorrigibly obstinate, others fearless, puffing their back feathers, and hissing at every person approaching them. They will take a meal-worm out of the hand, even some few moments after being caught, not owing to their familiar disposition, but to the excessive eagerness so peculiar to them: they steal it. First they look with great avidity, and with a sudden movement snatch it away: in a few hours after their capture, most Great Tits will take hemp-seed, eat and drink, inspect their prison, and then set to work to effect their escape. They try the different widths of the wires, one after another, and are soon acquainted with the greatest space between them; there they endeavour indefatigably to thrust the head through, in the mean time wounding their forehead and base of the beak, but without, however, giving up the idea. If they cannot succeed in getting their head through, the attempts are less frequently repeated, and generally, after one or two days, they settle down, and get reconciled to their altered circumstances. Tits become tame by degrees, and soon learn to distinguish strangers. They know their master and the other persons in the house, and are always on the look-out for any dainty bit: they know pretty well the box in which the meal-worms are kept, and are fully aware of the time or hours when food or something "extra" is given to them. I always found the Great Tit to be the most attentive as well as the most impudent of all cage birds (not considering Magpies or Starlings, which walk freely round about the room), and have myself caught hundreds of Tits in autumn, often twenty a day, and generally had a great many alive: they were the faithful companions of my boyhood, and are still my most attractive birds. Frequently I allowed one to fly freely about the room, which I usually lost very soon, owing to its cleverness in effecting its escape. One, however, often went off through the window, but never failed to return home before dark: at intervals it was shut up in a cage, when it performed, in a most satisfactory manner, the functions of a watch-dog. The cage was placed before the front window, and if any one came to the door it never failed to utter its chattering noise, which was a certain intimation of the approach of a visitor.

Great Tits show much partiality for bathing, and will often make themselves so wet as to be unable to fly for the next hour. In order to keep them a long while, a variety of food, above all, should be given: in winter they ought to get used to cold, but require very nourishing food, such as hard-boiled egg and beef, mixed with crushed hemp-seed and crumbs of bread; in spring they should have more exercise, and therefore a large cage, or a free excursion throughout the room, must be allowed them; while in summer a good supply of fresh water, to bathe in, greatly contributes to keeping them healthy. Two together seldom agree, and will rarely give other results than continuous fighting and permanent quarrels about the nice bits. If one has hammered a hole in a hemp-seed, the other will take it adroitly away, just at the moment when ready to be consumed. A meal-worm often passes a dozen times from one beak to another; still they always share it fairly, as one is as great a thief as another. If alarmed, nearly every Tit seeks a shelter in one of the corners of its cage or else in the seed-box, and then sits immovably, staring at the cause of its fears.

Most Tits die from want of exercise: on several occasions I found this proved, as often the half-dead or sick ones quickly recovered as soon as they were left in the room. Many also die through want of suitable food, or through over exertion in breaking seeds: the limbs become stiff, the eyes seem swollen and the eyelids bare. Soft or insect food will sometimes restore them to health, but usually these symptoms are only shown when the disease has become mortal.

An incurable and languishing illness, to which also many others of our cage birds succumb, is caused by the bird having no opportunity of pairing.



J.G. KEULEMANS LITH.　　　　M & N HANHART IMP.

THE GOLDEN ORIOLE

(Oriolus galbula).

Le Loriot (French). *Der Pirol, Bülow, Pfeifjolder* (German).
Turiol (Spanish). *Rigogolo* (Italian). *Phlorios* (Greek).
Iwolga (Russian). *Wielewaal, Goudmerel* (Dutch).

The Golden Oriole is considered a rare visitant in England; but though it may be of unfrequent occurrence near inhabited districts, it is most probably more numerous in quiet localities. This beautiful bird is but little known in Northern Europe, and its appearance in any populated part is usually regarded as a very extraordinary event; whilst its shy, retiring and restless disposition greatly contributes to its being rarely observed. I have often visited wooded localities in France, Belgium and Holland, where every morning, at an early hour, the note of several individuals was to be heard at different spots, though no trace of an Oriole could be seen during the middle of the day.

Deserted country gardens with high trees are its favourite haunts, pine woods or mountainous localities being avoided by it.

Golden Orioles are migratory, and only visit the temperate parts of Europe during the summer months. They are therefore never seen before the end of April or beginning of May, and rarely after the middle of August.

Sonnini observed them, during their migrations, in the southern islands of the Greek Archipelago, and gives the following account of their passage: — "They are observed about the time that figs are ripe, *viz.*, beginning of August. They are very partial to this fruit, which gives their flesh a delicious flavour, and in consequence are esteemed by the inhabitants as an article of food. About the first week in September they go to Lower Egypt, where a similar fate awaits them: their flesh being still as excellent, as in that country they also feed on figs and mulberries. There they remain a fortnight, subsequently proceeding farther eastward, in order to find sufficient food in a warmer climate."

Sonnini does not state to what part of the East they go: it seems that the winter residence of this species is not known with certainty. Dr. A. E. Brehm remarks that the Oriole migrates in Africa, as far south as the equator, and classes it with those birds whose winter quarters are unknown.

The Orioles constitute an extensive group of birds, confined to the Eastern hemisphere, of which the principal colours are yellow, green and black. They do not vary remarkably in size, the largest species known equalling that of the Missel Thrush (*Turdus viscivorus*), the smallest that of the Woodchat (*Lanius rufus*). By their formation they assimilate in some respect to the Thrushes; according to ancient naturalists, to the Rollers (*Coracias*); while by their colours they resemble the species of *Sericulus* from Australia. Yet they may be considered as forming a distinct and very characteristic genus, differing from the Thrushes by their stouter beak, longer wings, and shorter legs, and from the Rollers by their smaller head, and by the form of the bill and feet. This genus is, in Europe, represented by one species only, namely, the Golden Oriole (*Oriolus galbula*).

Few European birds display such a magnificent colour of plumage, or possess such a pure and melodious song, as the Oriole: he who has once seen or heard this bird will never forget it. It presents a still more striking appearance when on the wing, chasing its companions amongst the higher branches of oaks and birches; while their melodious song resounds through the forests, and enlivens the sombre locality. The regularly repeated, merry, piping note has gained for it various names indicative of its song, such as Oriole, Loriot, Turiol, Pirol, Wielewaal, and others; and the country people, in nearly every part visited by this bird, liken its notes to certain expressions: in some parts of Germany the labourer hears the following in it, "*Pfingsten, bier hol'n, aussaufen, mehr hol'n;*" and the French have "*Père Loriot, qui mange les cerises et laisse les noyaux.*" A great stretch of imagination is of course required to trace these words from the bird's song. According to fancy, we may hear the following syllables in it: "*weeloo-weeloo, wallow-eelooalloo,*" or "*allowwlee, woo alloo.*" Sometimes it calls "*eelee-ol, ee-oll-ollee, eeallow;*" at other times we hear "*wee, wee-all, jol-jol jollee, ollee.*" At intervals it utters a harsh, sharp, croaking noise, much like that emitted by the Barn Owl; this is heard when it flies in flocks, or when troops are chasing each other: the parent birds also, when approaching their nest, give utterance to a like sound. I may state here, as a curious fact, that both sounds—namely, the flute-like song and the harsh hissing—are also produced by birds of quite a different genus. Nearly all the species of West African *Lamprotornidæ* (Glossy Starlings) make exactly the same sounds as the Golden Oriole: I was greatly surprised to hear this during my excursions in the dense forests of Prince's Island and St. Thomas, and really believed the Oriole had come across; yet a shot, fired at the musician, proved its identity.

In the accompanying Plate the male is represented at two-thirds of its natural size; the distant figure is the female. The young ones, in their juvenile plumage, resemble the female, but are paler; they are coloured like young Siskins. Almost immediately after leaving the nest they forsake the locality, wandering for some days from one district to another, and then go off to their winter residence. By "winter residence" or "wintering" we understand the localities visited by a bird during the time it is winter with us: the bird which migrates knows no winter, for it is in constant pursuit of summer; winter would be its death.

We do not know whether the young Orioles moult while in foreign countries, or whether they assume their adult plumage by abrasion of the feathers; at all events, we see the young ones leave in their pale and spotted garb; while, with the exception of the females, no individuals in similar dress return to us the following summer: thus they have changed the colour of their plumage when abroad. I have observed that the oldest individuals are the blackest on the wing, and entirely lose the light edges on the wing-feathers. Very old females also turn yellower on the head, breast and tail. The young birds have a dark eye, while in the adult male it is red, and in the female brownish.

Orioles build a very beautiful, large and highly finished nest; they are skilled artists in weaving, and take great care to establish their home in safe and inaccessible spots. The nest is usually freely suspended to a forked branch at the top of some lofty birch, oak or elm tree, while its compact and solid structure and secure fastening enable it to resist the violence of storm and rain. It is always carefully concealed under leaves, and only to be discovered by the striking colours of the old birds flying round about it. Orioles use different materials in building, and, like the Song Thrushes, often weave decayed wood amongst other materials. There is always a great quantity of lichen and moss outside, mixed and interwoven with roots, dead leaves, spider-webs, the paper-like slips of birch-bark, tendrils of climbing plants, and also wool. It is lined with cow-hair, wool and feathers. This peculiarly constructed cradle varies more or less in shape, sometimes being rounded and deep, at other times flattened and wide. There is only one brood during the season. Forskal mentions the Golden Oriole as breeding in Arabia in September, which, if it be true, would lead us to suppose that it first nests in Europe, and a second time in another part of the world. Forskal, however, obtained his information from a sportsman, and did not state it as being his own observation.

The eggs, five or six in number, are equally beautiful and characteristic with the nest in which they are laid. They present a glossy appearance, and are of a pure or bluish white, marked with large and small dark purple and black spots all over the shell, with some rufous speckles on the larger end.

The young ones remain in their cradle from about twenty to twenty-four days. They will occasionally sit on the outside, or hop amongst the nearest branches, before they are able to fly; but no sooner are their wing-feathers sufficiently developed than the entire family suddenly leaves the locality.

In the vicinity of Leiden, in a deserted country seat, a nest was built in a high elm. I discovered it by finding a young bird near the trunk of the tree. When I had the nest taken down, only two young ones, nearly full grown, were inside, which made me think that some accident had befallen the family, the more so as one young one had been previously found on the ground, their number being nearly always five.

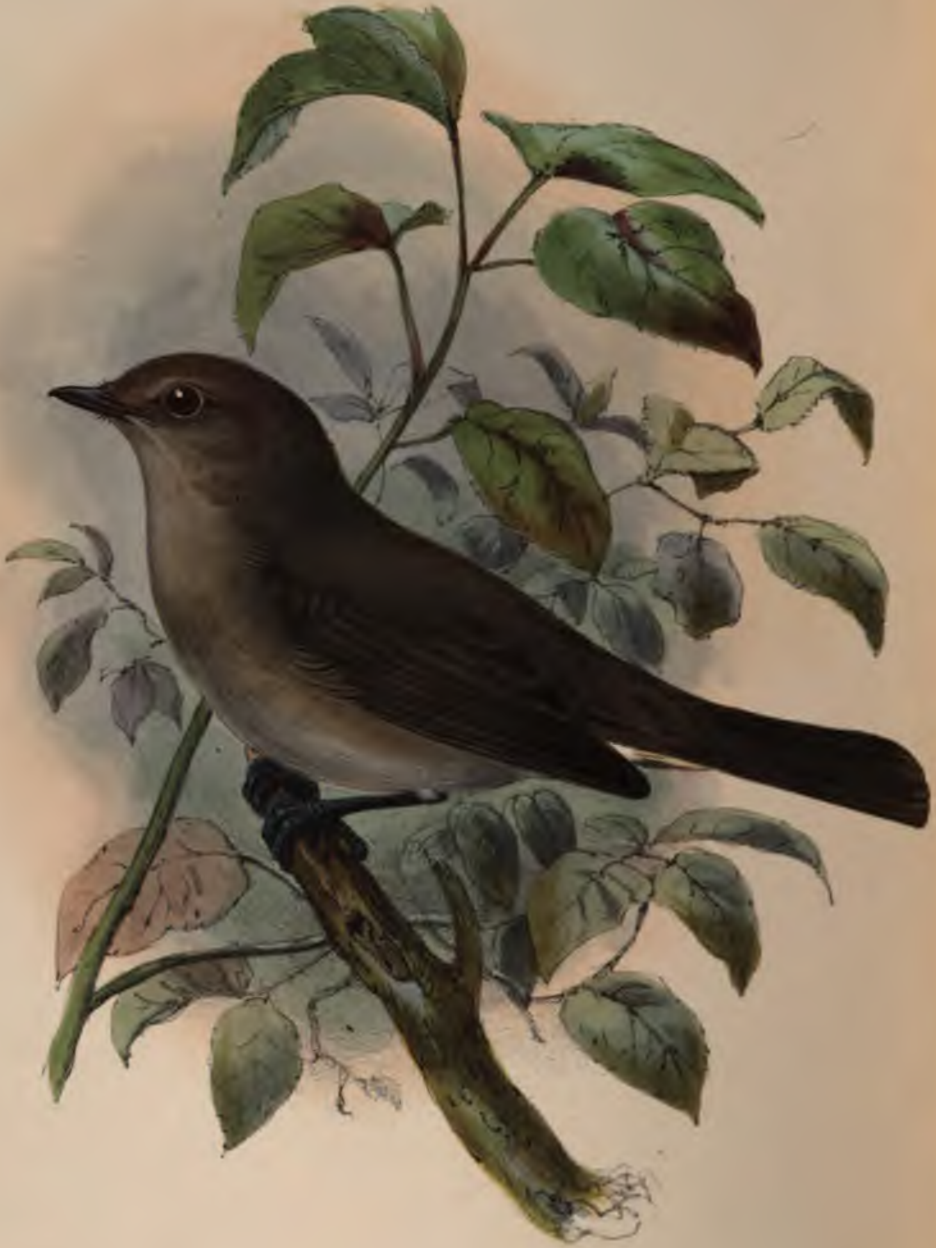
The Oriole feeds on fruit and soft insects. It is very fond of cherries and berries of different kinds; also of winged insects, spiders and caterpillars; while for small and shell-less snails it shows a special partiality. It takes a great quantity of food at a time, but does not eat during the middle of the day; cherries are devoured with great avidity, and usually it takes as many as the crop can contain.

As a cage bird it has much to recommend it; the charming plumage alone renders it an adornment to the aviary. Although shy and rather wild in the first days of its captivity, it becomes tame and even familiar if placed alone and in the vicinity of man. Orioles are much sought after as cage birds in France and Germany, and in summer nearly every amateur of birds brings up a brood of these magnificent songsters. In France the adult birds are caught, chiefly by gardeners, with snares placed round a bunch of cherries, the latter being fastened on the outer branches of a bush, near the water where the bird is in the habit of bathing and drinking early in the morning. I once caught a beautiful male with a snare intended for a Blackbird, and which was placed against a heap of branches. I had never seen this bird on the ground, and was much pleased with the unexpected capture. The bird did well in the cage, but succumbed to the cold of the severe winter of 1869. Yet at other times I kept old and young ones for a longer period, and I know of Orioles having lived for more than eight years in confinement.

For food, crumbs of bread and scraped carrot should be given; cherries, greengages or mulberries, are also much relished by this bird. Insect food is not necessary to make them thrive, although a meal-worm, given at intervals, will contribute to their health. It should be placed in a large cage, with wires on all sides, and the perches not too thin. Two together will rarely agree, as the Oriole is of a quarrelsome disposition; even the young ones fight each other as soon as they are able to perch. They sing very early in the morning, and also during the middle of the day, if placed in the shade or amongst the foliage of a tree.

Most individuals are very restless and in constant movement during the latter part of the summer, especially at night time; while during the day they will sit, with puffed feathers, for hours, sometimes sleeping and apparently very fatigued. Most other migratory birds exhibit similar restlessness about the time of migrating; several also die from inability to satisfy this natural inclination. The best way is to cover their cages, keep them inside the house, and supply them with that kind of food for which they show especial partiality.

Orioles are much addicted to habits of laziness, sitting for hours without movement, and discontinuing their song; but this does not always indicate a state of ill health. They will turn their head now and then, without however changing their attitude. When they become too quiet, a meal-worm placed in their food-box will generally bring them into activity again; but if this has no attraction for them, they should be taken out of the cage, and dipped in water or sprinkled with it. Bathing is very necessary, as cleanliness keeps them healthy, while spoiled or dirty plumage makes them ill.



J G KEULEMANS DEL ET LITH

P W M TRAP EXC

SYLVIA HORTENSIS.

THE GARDEN WARBLER

(Curruca hortensis).

La fauvette, La grisette, La Rousselotte (French).
Die graue Grasmucke (German). *De Tuinfluiter* (Dutch).

The Garden Warbler or Greater Pettichaps is a common summer visitant, and one of the most sober-clad birds which frequent this country. It arrives about the last week in April, the female usually a few days later, and leaves again early in September, when it migrates to the South of Europe and the northern parts of Africa. I have observed several of this species in Lisbon in December, and again in March; it seemed to me that these birds were there remarkably tame, as I saw one drinking from a fountain situated in the wall of a house. Another individual was hopping along the ground in a much-frequented locality. Many were disporting themselves among the trees in the public walking-places, although I did not hear them sing.

The Garden Warbler is of common occurrence throughout Central and Western Europe, and it visits different localities according to the nature of the countries. In England, for instance, it is met with on the outskirts of woods, in gardens or hedges, but rarely in forest or high and thick-foliaged trees. In Belgium and Holland it is common in the gardens of almost every town, often settling itself amongst the flower-pots outside the windows of the houses near the gardens. On the heaths in the southern parts of Belgium, as well as in the North of France, this bird is very scarce, while in the central part of this latter country it may be seen in every open plain, together with the Lesser Whitethroat (*Curruca garrula*), flying from one bramble-bush to another. It may also be heard pouring forth its deep rolling song from the topmost branches of the trees; and although more abundant in the bushy plains, this species is very commonly distributed over the central and southern provinces of France. I have often been astonished in autumn, when the trees had lost their leaves, to find the deserted nests of the Garden Warbler in the most frequented spots of the public gardens near and in Paris,—spots where, on several occasions, I had been sitting for hours without ever having supposed that this little songster had established its home there.

With respect to movements, the Garden Warbler assimilates to the Blackcap, with which it also agrees in construction; both species are closely allied, and also differ from the other *Curruca* by their shorter tails and rather stouter beaks.

The Garden Warbler is a very quick and nimble little bird, and moves with wonderful agility among the branches even of the thickest hawthorn hedges. When it flies it nearly always proceeds in a straight line and to the nearest bush, hiding itself immediately under the foliage. When observed on the outer branches, it is either ready for departure or else in pursuit of some flying insect, for it usually settles and finds its food in the midst of a bush. Owing to its natural tameness it will remain there even in the immediate presence of man, and thus is often unnoticed for some time, while its dull-coloured plumage also contributes to its safety. Most birds of similar habits are only seen at the moment when they fly away, while those which confidently remain amongst the branches escape observation. The Garden Warbler, however, will often announce its presence by an unexpected warbling, or by its soft common note, which is very similar to that of the Blackcap. Its often long continued song is deep, warbling and merry; to the listener, unacquainted with this bird, it seems to be produced by a much larger and more powerfully built species, and even to the naturalist may often cause uncertainty, if but few of the notes are uttered, or when it just begins its musical performance. With respect to vocal abilities, the Garden Warbler may be considered as highly perfected, not by the imposing harmony, expression or charming sweetness of the song, but by the deep, powerful and quickly uttered sounds, which sometimes resemble the piping of the Blackbird, at other times the joyful twittering of the Swallow or Goldfinch. To no songster could the word Warbler be so aptly applied, for the notes produced by this bird distinctly resemble the syllables "*war-ble.*" The common or call-note, which is often heard when it is moving in the bushes, is a mellow, regularly repeated "*tuk, dek-dek.*" Of most *Sylviæ*, however, it cannot be said they possess a call-note, as they do not really call each other like those birds which live or migrate in flocks, but merely produce simple notes as an expression of their feelings.

The Garden Warbler is of a very tame disposition, though it cannot be described as familiar; it does not fear the presence of man, but will not seek him. Familiar birds are the Starlings, Sparrows, Crows and Swallows, while those which may be called tame are the Robin, the Tits, Kinglets and the Jenny Wren, the common Flycatcher, Garden Warbler, Blackcap, and several other soft-billed songsters. Other birds are tame by their confidence in man, because they do not know him as their enemy; such are most North-European Finches, the Crossbill, Waxwing and others.

The Garden Warbler breeds twice during the summer, and makes a careless nest in bushes, apple or pear trees, and, according to circumstances, builds at one time high, at another very close to the ground. I have found it breeding in an unfinished nest of the Jenny Wren, causing the entire concealment of the hatching bird. It builds also among nettles, at about a foot above the ground. The highest situation of the nest I observed was in a pear tree, on the topmost branches, at an elevation of about twenty feet.

A great quantity of dried grass, some roots and green moss, are always present in the nest; sometimes, but not invariably, it is lined with sheep's-wool or horse-hair; while in other nests the horse-hair is interwoven with the remaining materials, and no particular lining is used at all.

The eggs are from four to six in number, of a dirty white or light sandy grey, with brownish and grey spots distributed over the surface, and in most eggs these are more numerous at the larger end. They vary in ground colour and markings, although they still are characteristic by the way in which they are spotted. They are the nearest to those of the Cuckoo, and often the egg of the latter is deposited in the nest of the Garden Warbler. I know of several nests in which a Cuckoo's egg was present, the latter being only discovered after careful comparison, so much are the eggs of these two differently formed birds sometimes alike.

The male takes part in hatching, and is very assiduous in feeding the young ones, especially during the first four or five days. The young birds remain about sixteen to eighteen days under parental care, and then go and seek their own livelihood. I have never seen the old birds feeding their young after they were able to fly, they being nearly always found alone, and the young family dispersed in different directions. Yet the old ones exhibit great affection for each other and their progeny, and the male, during the pairing time, often performs different curious jumps and bowings round about the female; it may be seen hovering with apparent difficulty, as if wounded or stiff; while at other times it suddenly rises in the air, singing short strains, and then descending with short and irregular movements of the wing.

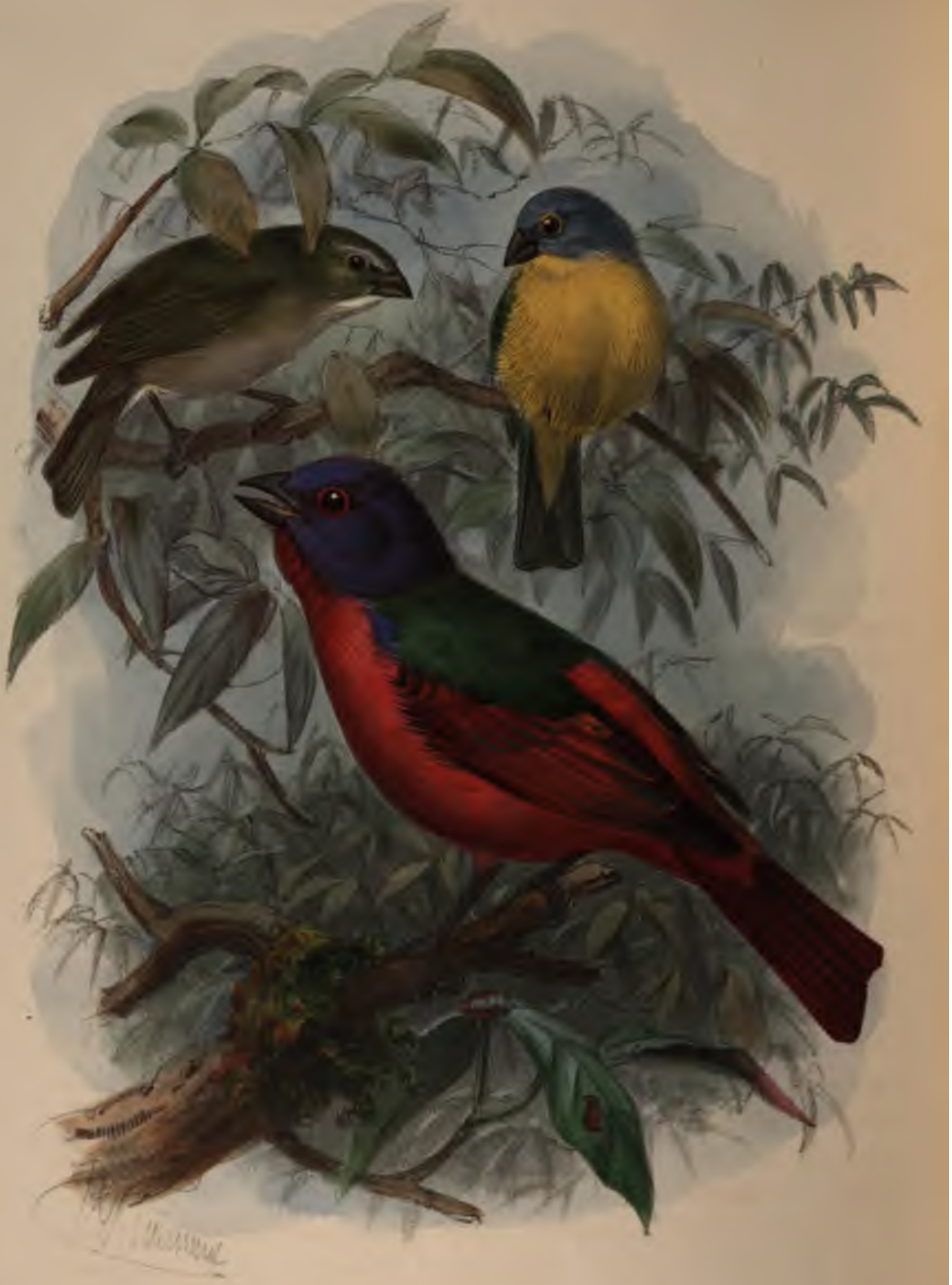
The sexes are similarly coloured, but the female is a little smaller in size. The young birds resemble their parents, but are a little paler and more sandy. Some old individuals exhibit perceptible difference in their shade of plumage, one being often much darker or greyer than the other; the colour of the legs also varies.

Garden Warblers feed on berries and insects; they agree, in respect to food, with the Blackcap, but are more berry-eaters than any other species of *Sylvia*. In my garden was a bush of honeysuckle, the berries of which were eagerly taken by this bird, while the Blackcaps and Robins left them untouched. I often observed one repeatedly coming and eating the berries, and then in a hurry flying away. Elder-berries, currants, and several kinds of fruit, such as greengages, grapes, or over-ripe pears, are much liked by it, and in nearly every orchard it may be seen disporting itself among the trees, at intervals pecking at the fruit or taking up a caterpillar. It catches many insects on the wing, snapping at and sometimes pursuing them for some distance.

In confinement it should be fed on crumbs of bread, hard-boiled egg, and some minced meat, or, instead of egg, scraped carrot, the whole to be mixed together. During the summer red or black currants or gooseberries may be given, while in winter, as a substitute for fresh fruit, a dozen of boiled grocer's currants daily, contribute to the good digestion of the bird. It will eagerly swallow juice of grapes, peaches or pears, and is partial to sugar in its water. Some individuals do not reject seeds, like moss- and crushed hemp-seed, if these are mixed with the food. Yet all oily seeds seem to act very unfavourably on their digestive organs, and in most cases the bird will suffer from diarrhœa or sore throat. Although the Garden Warbler is easily kept alive, it rarely survives the winter, cold and wet having a marked influence on it. During and after the moulting time, till the following spring, it should have some ants' eggs mixed with the food, and four or five meal-worms daily.

It becomes very familiar and confident, and is very endearing in its expressions when attention is bestowed upon it. Like most other soft-billed songsters, it will make all kinds of begging movements when a meal-worm is shown and kept near the cage. It eagerly looks at the dainty bit, turning its little head sideways, and distinctly expresses its wish, "Do, give it me."

It should be kept alone, in a cage with wires in the front only; and great care should be taken to keep the bird clean, especially when fruit is given to it. It sings throughout the day, and, except when moulting, during all seasons.



CYANOSPIZA CIRIS.

THE NONPAREIL.

(*Cyanospiza ciris.*)

Nonpareil; Pape—Indigenous names in Louisiana. *Nonpareil*—French.
Nonpareil; Tanagra—Dutch.
Painted Finch; Painted Bunting—English names in the United States.

This charmingly coloured little Finch inhabits the southern countries of North America, whence it migrates, in autumn, as far south as Mexico. Its range extends from Honduras to North Carolina, and up the Mississippi to Natchez.

Although belonging to the family of *Fringillidæ*, it assimilates to the Tanagras (*Tanagra*) by its brightly coloured plumage, habits and food; while by the formation of its beak it approaches the Buntings.

The combination of colours in the male is most effective, and this species is one of the most magnificent cage birds known. In the Plate it is figured in its summer dress, the two distant figures representing the female, and the male in its winter plumage. The female and young ones are similarly coloured. The summer plumage of the males appears gradually by coloration of the feathers, while the winter dress is assumed by moulting. Some individuals, however, especially those kept in confinement, do not perfectly change their colours, but exhibit an intermediate plumage, and have the under parts spotted with the yellow feathers of the winter garb. The old female bird, in captivity, will also occasionally turn brighter, resembling the male in the yellow plumage.

The Nonpareil breeds only once a year, and builds a careless nest of grass, usually on the lower branches of orange trees or in bushes, and often near human dwellings. It is lined with fibrous roots and horse-hair, and contains from four to five white or pearly eggs, spotted with dark purple.

The young ones are fed out of the crop, with seeds and pieces of juicy fruit, but after twelve or thirteen days leave the nest and eat alone. The food of the old birds consists of soft seeds, oranges, grapes, and other fruits, but, like most other *Fringillidæ*, they will also take insects, and catch flies and beetles on the wing; they are often seen on the ground, pecking seeds, or flying away with their food in order to consume it in a safer locality.

The males sing charmingly, and the song resembles that of a mule between a Canary and a Goldfinch. They sing throughout the day, even during the warmest part, and often ascend the topmost branch of a bush while engaged in their musical performance. The young males begin to warble when about six weeks old, but discontinue their song as soon as migration commences.

Although of very pugnacious disposition, they wander in flocks, and are very numerous in their native countries. Audubon, the great American ornithologist, gives the following description of their capture: — " About the middle of April the orange groves of the lower parts of Louisiana (and more especially those in the immediate vicinity of the city of New Orleans) are abundantly supplied with this beautiful little Finch. But no sooner does it make its appearance than trap-cages are set, and a regular business is commenced in the market of the city. The method employed in securing the male is so connected with its pugnacious habits, that I feel inclined to describe it, especially as it is so different from the common way of alluring birds that it may afford you, kind reader, some amusement.

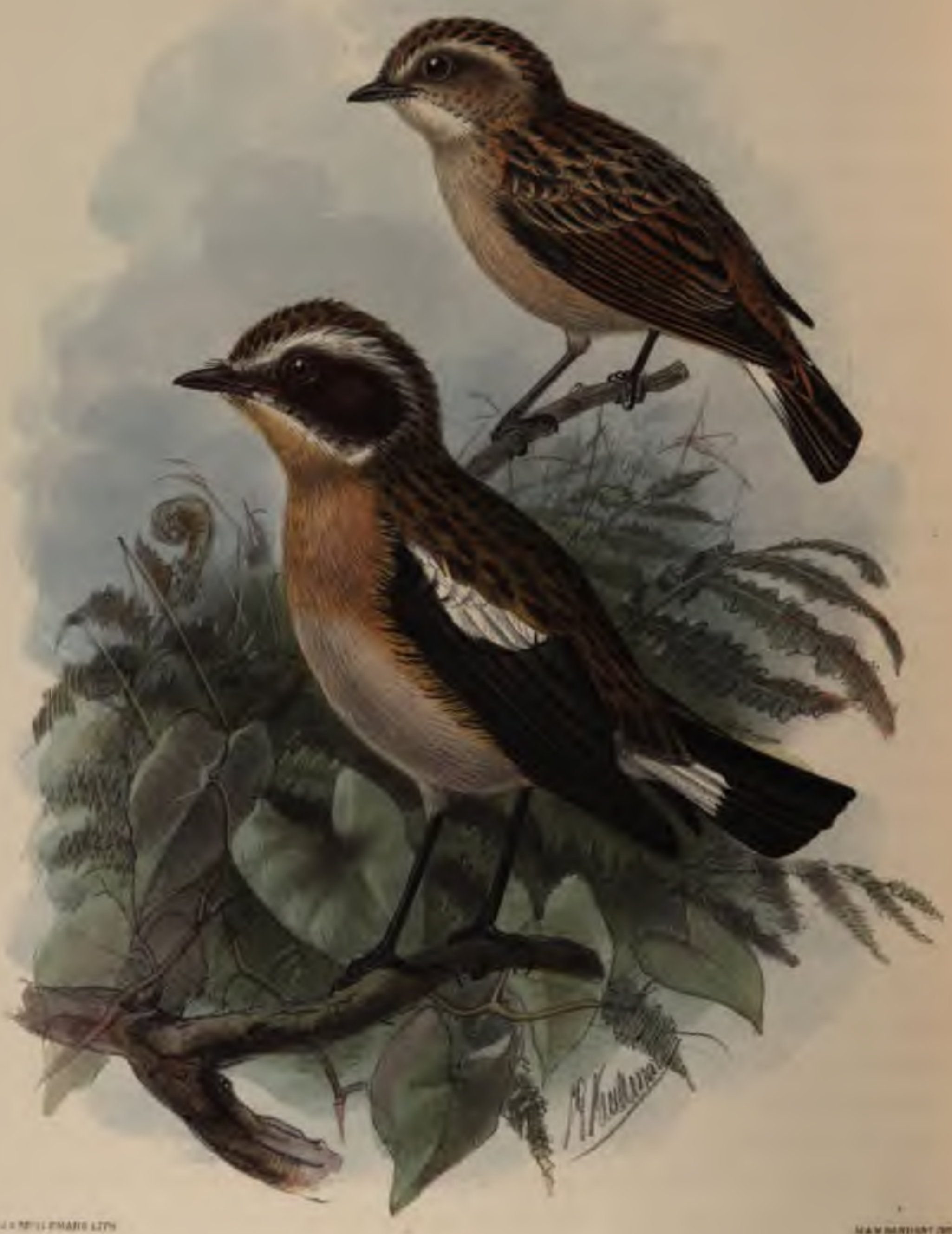
" A male bird in full plumage is shot, and stuffed in a defensive attitude, and perched among some grass-seed, rice or other food, on the same platform as the trap-cage. This is taken to the fields or near orangeries, and placed in so open a situation that it would be difficult for a living bird of any species to fly over it without observing it. The trap is set. A male Painted Finch passes, perceives it, and dives towards the stuffed bird, with all the anger which its little breast can contain. It alights on the edge of the trap for a moment, and, throwing its body against the stuffed bird, brings down the trap, and is made prisoner. In this manner thousands of these birds are caught every spring. So pertinacious are they in their attacks, that even when the trap has closed upon them they continue pecking at the feathers of the supposed rival. The approach of man seems to allay its anger in a moment. The live bird is removed to the lower apartment of the cage, and is thereby made to assist in decoying others. They feed almost immediately after being caught, and, if able to support the loss of liberty for a few days, may be kept for several years. I have known some instances of their being kept in confinement for upwards of ten years. Few vessels leave the port of New Orleans, during the summer months, without taking some Painted Finches, and through this means they are transported probably to all parts of Europe. I have seen them offered for sale in London and Paris, with the trifling difference of value on each individual which converted the sixpence paid for it at New Orleans to three guineas in London."

In Audubon's time these birds seemed to be more expensive than at present, their value being now reduced, according to the supply, from ten to fifteen shillings a pair in most towns of England, while in France the price rarely exceeds an equal number of francs. Nonpareils have become more numerous during the last ten years, and, as they breed freely in confinement, will soon become as widely distributed and as numerous as the Canary. Yet their inclination to pair when in the cage, does not seem to have been generally observed, for most individuals are kept either separate in a small cage or together with other foreign Finches in a large aviary,—two circumstances which afford little opportunity to make the birds pair. I know, however, several instances of their successfully producing two broods a year, and some amateurs obtained three broods during that time. An ordinary breeding-cage, about the size of those used for the Canary, but not smaller, will in most cases be sufficient. A larger aviary, in which breeding-apartments are placed, would be preferable, while a quiet locality is one of the first requisites to induce them to breed. Being foreigners, they do not always follow the rules of the countries to which they are exiled, and thus will often breed at a time when the other tenants of the same domain have quite forgotten, or do not yet prepare themselves for conjugal endearments. They usually hatch a first brood in March and another in July, but I have seen them rearing their young ones as late as December. It is very amusing and interesting to see a cage full of these little birds: they look much like young Greenfinches, but do not exhibit their identity so soon. Yet their lively movements and merry look give them a peculiar and interesting appearance. If two birds are kept together, and signs of pairing be observed, great attention ought to be paid to the hen; for as soon as the fourth egg is laid, the male should be placed in a separate compartment of the cage, so as to avoid quarrels between the couple, or annoying visits to the hatching female. When the young ones have come out, some hard-boiled egg and crumbs of bread should be placed in the cage; while another box or glass, containing bread softened in sugar-water, must be within her reach. The seed-box also ought to be well filled, and the best kinds of seeds at such a time are summer rape and crushed hemp-seed. The old birds, about or before the pairing time, may have some hard-boiled yolk of egg and some small pieces of egg-shell mixed with their food.

Nonpareils should be kept either in pairs or separate, as a greater number placed together will quarrel violently.

The best food is fruit, bread, and seeds, such as millet, ground maize and summer rape. During the summer, berries, cherries, pears, grapes or oranges, and in winter some hard-boiled egg and scraped carrot, may be given to them.

Most individuals generally live but a short time in captivity, unless the above-named food is given to them. Owing to their affinity to the Finches in the form of their beaks, most amateurs regard them as seed-eaters, which they only are up to a certain point. Fruits, or the juice of them, not only contribute to their health, but are the principal requisites to keep these charming creatures alive.



J. G. KEULEMANS LITH.

M & N HANHART IMP.

SAXICOLA RUBETRA.

THE WHINCHAT

(Saxicola rubetra).

Le Groulard; Le Traquet tarier (French).	*Braun-kehliger Steinschmätzer* (German).
Het Paapge (Dutch).	*Stiaccino* (Italian).

THE *Saxicolæ* constitute a very distinct form of birds, allied to the *Sylviadæ* by their external appearance and habits, and to the *Motacillidæ* in the form of their beak and similarity of movement. They are generally divided into two sub-genera, *Saxicola* and *Pratincola*. It is generally considered by ornithologists that the species of the former sub-genus chiefly live in open plains and on the ground, while those of the latter are more peculiar to trees and bushes. The *Saxicolæ* proper are the largest in shape. They walk and run very quickly on the ground, but also jump from stones and on the branches of bushes or low plants; and often perch like the *Sylviæ*, or lie on the ground, with puffed feathers, like Larks or Gallinaceous birds. They jerk the tail like the Nightingale and Wagtail (not like the Redstarts, in which it has a vibratory motion), are very restless, nimble in their movements, and good flyers, although they always keep close to the ground. They have a sharp call-note, but a very simple, insignificant song.

The *Pratincolæ*, by their attitudes, remind one of the Robin, but in size they are a little smaller and shorter. They jump on the ground, move very quickly among the branches, but never hang on them like the Garden Warbler, Blackcap, Whitethroat, or Wood Wrens. They perform the same slow and regular movement with the tail, though not so often as the *Saxicolæ* proper. Most species have a pleasant song, and are vocally more developed than the former.

Both sub-genera assimilate in respect to food and habits, and both are more peculiar to the ground than to trees, the greatest difference existing in their size, the *Saxicolæ* being a little larger than the Nightingale, the *Pratincolæ* a trifle smaller than the Robin.

The Whinchat is the plainest coloured of the group, and the sexes do not differ so perceptibly as in the Stonechat (*S. rubicola*) and allied species. It is a common summer visitant in England, staying with us from April till the beginning of September. Specimens are said to have been occasionally observed as late as October; these, however, are exceptional cases, and it is even very probable that these individuals were young or female Stonechats, which are very similar in colour to the female and even the young males of the Whinchat. Stonechats often remain with us throughout the year, and especially in the South of England, where they are frequently observed during winter; but the Whinchat has, so far as I am aware, never been shot, and its identity proved, after the end of September. Its range extends over the entire Continent of Europe, Northern and North-western Africa; it is also observed in Palestine during its migrations. I have shot the female in Prince's Island in January, the only specimen I observed there, and most probably it was migrating, as some natives assured me that the same kind of bird was seen by them every year during the rainy season (September to November), but never before that time.

It is common in France, especially in the meadows and near rivers or rivulets, but rare in the dry and heathy localities, where its congener, the Stonechat, takes its place.

In Holland it is often met with in the southern and eastern parts, and is much rarer in the watery, or, as they are called, coast provinces. In Belgium it is rare, and in Germany, according to the localities, common at one place and but an occasional visitant in another.

The Whinchat is found in sandy districts, on ground covered with furze with bushes here and there, and especially in the vicinity of grass-fields or meadows.

The nest is situated on the ground amongst scrub, sometimes on heath at some inches above the ground; in Holland chiefly on the railway-banks in the provinces of Brabant and Guelderland. I have never found a nest myself, although I knew a pair to breed in one of these banks, very near a little garden behind the residence of the village station-master; I often watched the visits of the old birds, but did not succeed in finding their abode. The materials of which the nest is constructed often vary according to its situation; sometimes it is composed of grass only, at other times of soft fibres and dried grass together with green moss, and lined with hair.

The eggs are pale greenish blue; sometimes, but not always, spotted with light rufous at the larger end. I have seen white eggs, with a distinct circle of very light brownish and dark flesh-coloured specks: the same variety of eggs is often found in the nest of its congener, the Stonechat. It is recorded by some naturalist that these birds form a kind of track amongst the herbs, so as to be enabled to approach their nest from a distance unobserved. There are other kinds of birds of which the same may be said; for instance, the country people near Brussels state that the Wood- and Willow Wren act similarly. It may be really the case that indications of a tunnel are perceptible, but this does not prove that the birds construct it purposely; for my own part I incline to the belief that it is a path formed by them in continuously leaving and entering in the same direction.

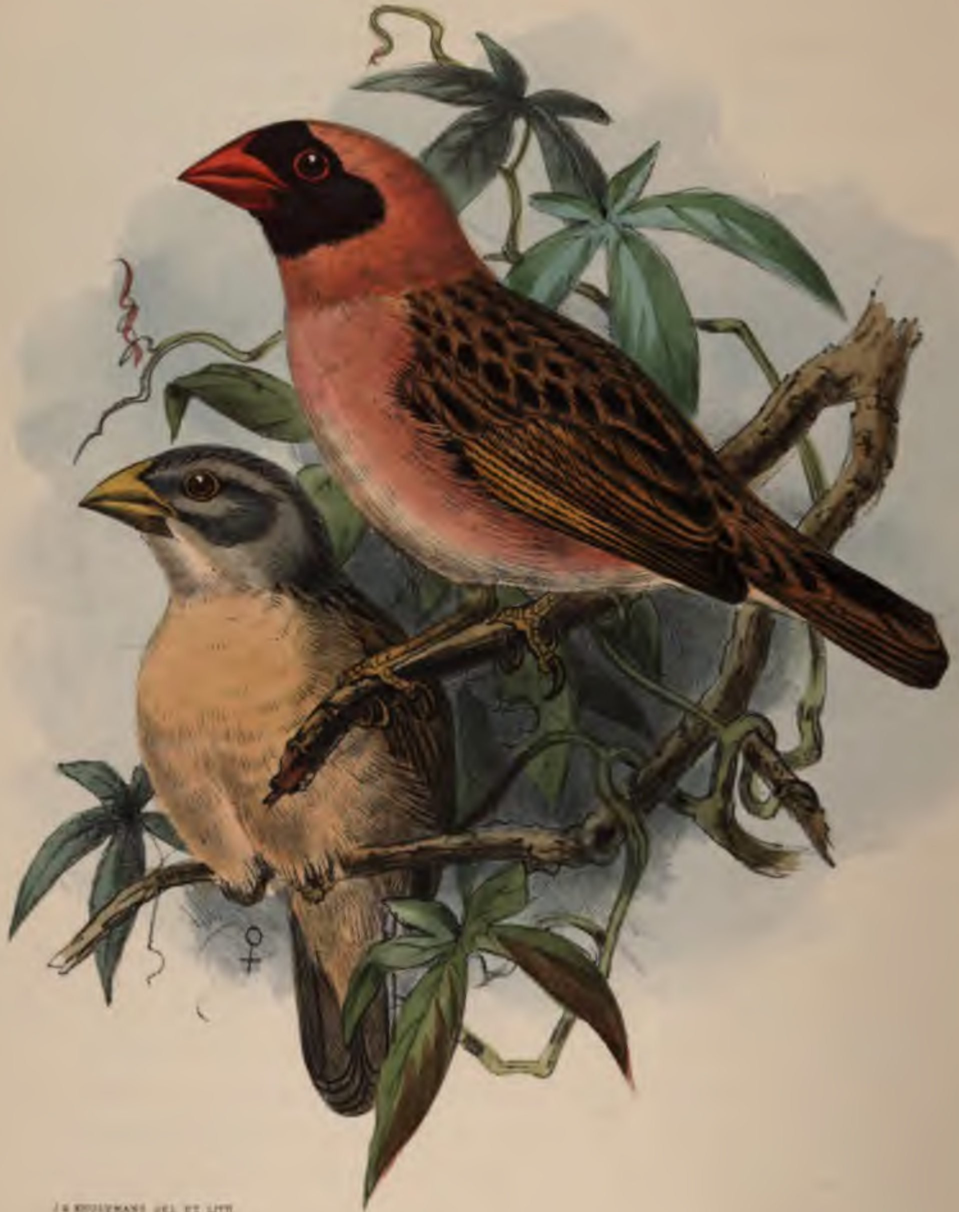
Whinchats breed twice a year, each brood containing from four to six eggs. According to Brehm, the male does not take any part in hatching; this agrees with the breeding of the Stonechat, of which I have observed that the male is rarely seen near the nest, and only, when it comes to feed the female, remains for a short time in the vicinity. In fact both species are rarely observed except before and after the breeding time: their living on the ground or in thickets conceals them during the greater part of the summer. In autumn, when the young ones are reared, the whole family may be seen gaily moving amongst the bushes and hedges, and often quickly jumping on the ground.

Whinchats are nimble in their movements, although they do not assume the climbing or perpendicular attitudes of most *Sylviæ*. They jump after the manner of the Robin and Bluethroat, but are quicker; they often dash forward on the ground with astonishing swiftness, and quickly disappear amongst the foliage when some suspicious object is near. They will frequently settle on the high shrubs or topmost branches of a bush, uttering their merry twittering song, and then suddenly jump down to the ground or to the lower parts of the bush.

The male and female differ very perceptibly in summer, but after the autumn moult they are nearly alike in plumage. According to localities, climate or countries, the males vary in the colour of their plumage, some being very brown on the breast, dark on the head, and have the different colours sharply defined; others do not assume such a perfect plumage, and resemble more or less the females. The young ones, before the first moult, are similar to the old females, but the feathers of the sides, wings, and upper parts are edged with white. After having changed their juvenile dress, about August or the beginning of September, they look very like the old ones of both sexes, for about the same time the male has changed into its winter dress.

Whinchats feed on insects and seeds, and assimilate, with respect to food, to the Hedge Sparrow (*Accentor modularis*). They take most kinds of caterpillars, with the exception of the hairy ones; also small grasshoppers, spiders and gentles. In several individuals, shot in summer, seeds have been found in the gullet or stomach, but what they were could not be ascertained.

On several occasions I tried to keep these birds alive, but freshly caught ones mostly died within a very short period, notwithstanding the care and attention bestowed upon them. Last year I succeeded in obtaining a very fine male bird, which took very kindly to gentles, meal-worms and ants' eggs, but declined any other food during the first week of its confinement. Several times the common bird-catcher's feeding system, the so-called "meating off," was brought into practice, but the bird cast up the pellet immediately afterwards. I then tried the watch-glass trick, and came to good results by this well-known method of deceiving the bird: the food is placed round and on the surface of the glass, and some meal-worms or other living insects under it; the captive, attracted by the moving meal-worms, eagerly pecks at them, but touches the glass, and unconsciously takes the food scattered on the surface. It is a very good way of treating obstinate captives, especially such as Wheatears, Stonechats, Whinchats, Wagtails, and Jenny Wrens. My Whinchat lived for about six months, and I attribute its death to irregular and difficult moulting. It was very familiar, and, when allowed to fly freely in the room, it always poached on the meal-worm preserve, flying after me when I took the box away. It was very quarrelsome, and hissed at its feathered companions if they approached its cage or came near it while engaged at its favourite meals. Its ordinary food—on which it thrived—was a mixture of scraped carrot, German paste or moss-seed, crumbs of bread, and hard-boiled egg. It would not eat berries or fruit, but was very fond of ants' eggs, of which it took as many as fifty at a meal. Meal-worms were taken in the beak, killed by knocking them against the perch or ground, and then swallowed eagerly. Although it enjoyed perfect health, it never uttered any song, its call-note only being heard at intervals.



J. G. KEULEMANS DEL. ET LITH.

P. W. M. TRAP EXC.

PLOCEUS QUELA.

THE RED-BEAKED WEAVER-BIRD

(Ploceus sanguinirostris).

Le Tisserin à front noir } (French).
Le Tisserin à bec rouge }
Quela } (Dutch).
Roodbek Wever }
Diock (German).

This species is one of the most common African Weaver-birds, and consequently a very generally known cage bird. It is distributed over the southern, central, western and eastern parts of the African Continent, where it frequents the cultivated districts, the grass-fields near the rivers, or the overgrown swamps. Like most other Weavers, it lives sociably, builds a handsome nest, feeds on grass-seeds and insects, and changes the colour of its plumage according to age or season.

Being of very frequent occurrence and of wandering disposition, little attention has been bestowed on the habits of this Weaver in the wild state. Of the very common tropical birds we know little or nothing, because they are already represented in every collection, and "only cage birds." Another reason for their being so imperfectly known is the shyness of some species; while others, by their natural inclination for visiting the cultivated districts, are always considered unwelcome guests, and consequently no other attention is bestowed on such birds than to drive them away. The explorers of African countries have communicated but few particulars concerning the habits, and especially the nidification, of the Red-beaked Weaver-birds. Yet we know that the nest is very artistically made, being formed of different vegetable materials, skilfully interwoven. The nests are made of the green and fresh fibres, such as split palm-leaves or grass-stems, and not of dry materials, as is stated by some authors. I have found several Weaver nests in West Africa, nearly all of which were composed of fresh vegetable fibres; those nests which had been used before had dried by the sun, and turned straw-colour. It is quite obvious that a nest made of grass will, when exposed to sun and

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wind (like those of nearly all Weavers which are freely suspended), change into straw or hay. Some authors state that the Weavers render the materials flexible by moistening them with a fluid from the beak, and so make the dry fibres smooth and fit for use. As far as I have observed, no Weaver acts thus; but the materials are softened by turning and passing them through the constantly moving mandibles; they are split into small strips or threads, and interwoven with the beak. Yet several kinds of birds which really weave, use dry substances, but in these cases the fibres are very thin, thread-like, soft and flexible. The nest of the Red-beaked Weaver-bird is round, almost like a ball, with an almost imperceptible lateral opening. It is freely suspended from the outer branches of trees, sometimes at an elevation of over thirty feet. Both male and female actively engage in constructing their little home; the male brings the materials, and fastens them while the female turns and arranges them during the absence of her mate. A pair of Weavers, while building, are always very excited and animated; they chatter and twitter together, as though discussing the plan of construction. The eggs are from four to six in number, of a pale greenish blue. I do not know whether a pair of this species breeds more than once in the same nest; at least, allied members of the Weaver tribe build a new home for each progeny. The beautiful colours of the male are only exhibited during the pairing season, lasting about five or six months. As in the countries inhabited by these birds it is a permanent summer, and the period of propagation being thus almost unlimited, there is of course no especial time of year in which they change their dress. Unlike most other *Plocei*, the male does not assume a plumage similar to that of the female, but exhibits a mere imperfection of colours when compared with the previous summer dress. Yet their change offers great difficulties in determining either the season or the age of the bird. Individuals collected in the same locality will often vary, and exhibit very different modifications, with respect to the colours of their plumage; I have seen adult males in which the feathers of the under parts, the breast and sides, inclined to a beautiful pink, while the head remained as in the imperfect state. The distant figure in the Plate represents the adult female, drawn from an individual shot during the breeding time. The young ones are like the female, but a little more distinctly spotted, and, if alive not in skins or stuffed specimens), may be at once recognized by their pale horn-coloured bill.

Red-beaked Weaver-birds, although of gregarious habits, are very quarrelsome; they are shy, frightened and retiring, when exposed to the presence of man. Good treatment, however, will make them more docile, though slowly and only gradually. If kept in a small cage, and deprived of opportunity to weave, they present but little attraction to their owner. A pair should be placed together in a large cage with wires on all sides, and have an abundant supply of slips of paper, threads, wool, fibres, cotton, &c., or some hay or grass-stems. First some of the fibres are fastened to the perches or wires, and thence the birds continue and extend their industrious labour all round their cage, building the most finished tracks, which are often interwoven into a mass so compact as to fill up all the space in their dwelling. If, when their inclinations to weave are roused, the materials are exhausted or insufficient, they will pluck out one another's feathers in order to supply the deficiency. Hence no other bird should be placed in their company, as very soon the new-comer will be deprived of its entire plumage, its feathers being introduced in these specimens of weaving art. It often happens that the Weaver-birds entangle in their own tissue, and many have been found dead, hanging by the nails; therefore the latter should be cut when grown too long. For food, millet and canary-seed and some chickweed should be given.